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EMERGENCY HOUSING

BY

RALPH STANLEE FANNING

B. Arch., Cornell University, 1912.

M. S., University of Illinois, 1917.

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE PROFESSIONAL DEGREE OF

MASTER IN ARCHITECTURE

IN

ARCHITECTURE


IN

THE GRADUATE SCHOOL

OF THE

UNIVERSITY OF ILLINOIS

1921



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APRIL 2, 1921

I HEREBY RECOMMEND THAT THE THESIS PREPARED BY _____

RALPH STANLEE FANNING

ENTITLED _____ EMERGENCY HOUSING _____

BE ACCEPTED AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE
PROFESSIONAL DEGREE OF _____ MASTER IN ARCHITECTURE _____

I. H. Prorine

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Recommendation concurred in:

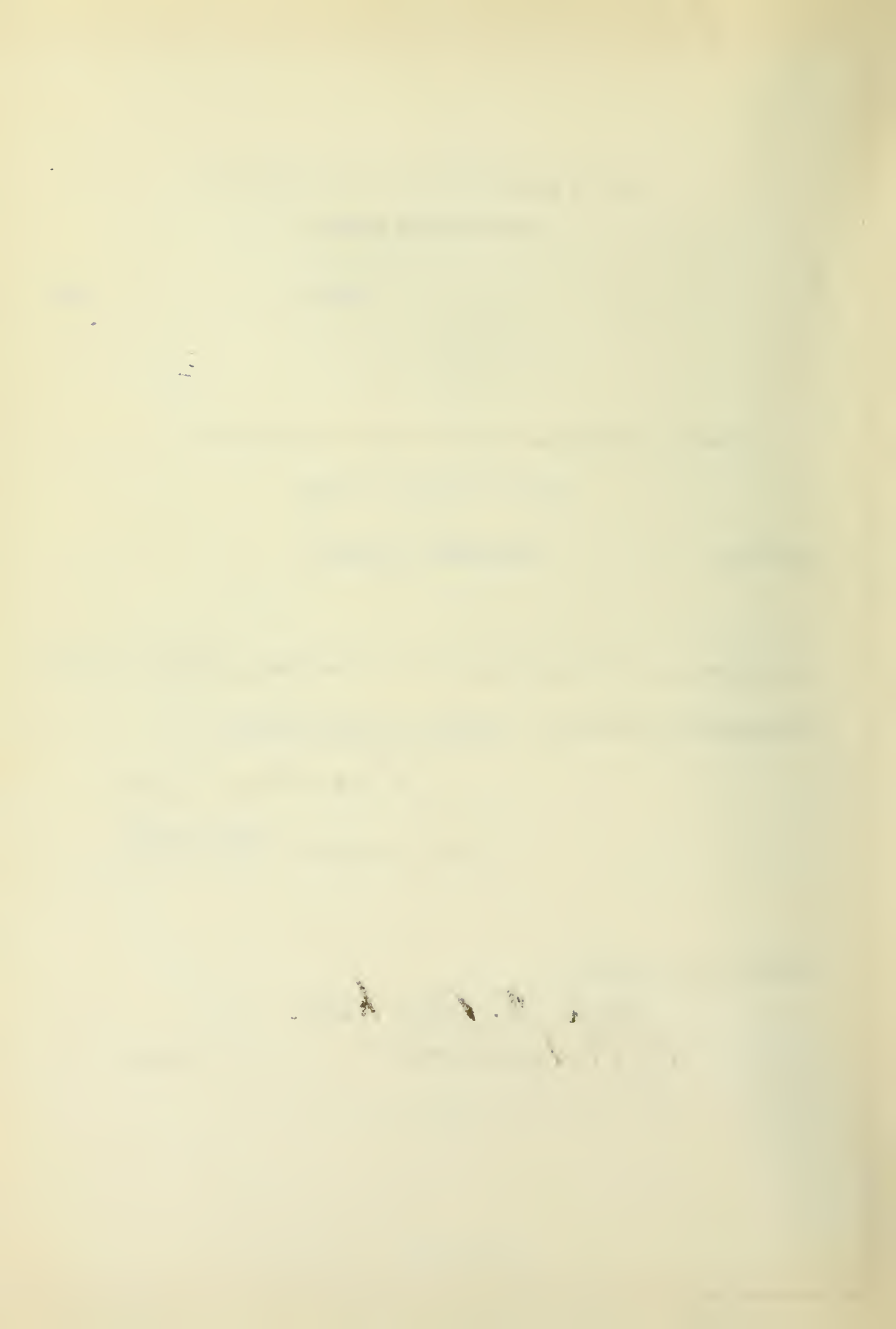
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EMERGENCY HOUSING.

Outline of Thesis on Emergency Housing presented at the University of Illinois for the professional degree of Master of Architecture, 1921.

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EMERGENCY HOUSING

INTRODUCTION

I. INTRODUCTION, GENERAL.

The robin building its nest in Spring, the fox seeking out some secluded spot in which to burrow, the beaver with tireless energy damming up a stream, - all proclaim the natural instinct for animals to house themselves as safely and snugly as possible, to provide the best conditions in which they may live and rear their young, unmolested by the elements and their natural enemies. Man, in his primitive state, must have been forced by similar instincts to select for himself a safe cave or a protection of forest to guard him and his from raging storm and savage beast. With an awakening intellect and developing reasoning power to supplement a natural instinct, man early began to construct for himself, to utilize the gifts that Nature provided and to plan his domicile according to his ever multiplying wants and needs.

To study the development of man's dwelling places is to study the history of man himself, so accurate a material record of his life and his state of civilization is the house in which he has lived. The climate and country, the occupation and social habits, the state of governments and the process of arts are all recorded in the habitations of men. The climate compelled him to build for protection from heat or cold, from rain or snow; the country furnished him the material which his awakening talents

must needs utilize; his occupation and social life determined the shape, size and plan of his dwelling place; and from these we are able to determine whether his laws allowed him to dwell in peace or in warfare, or permitted him to devote his days to the perfection of his arts, to make permanent records of his ability as decorator, painter or sculptor.

It takes but a casual student of history to comprehend how great a part the homes of a people have played in their national development; of what a direct result they are of the life that has inspired their building. Go back to the dawn of human history, to the first known inhabitants of the valley of the Tigris-Euphrates, building with mud and reeds, to the early Egyptians building with the natural granite and with bricks made from the mud of the Nile. All people were building their homes and their temples with the material that Nature provided and in a form that Nature suggested. No less were the marble temples of the Greeks, the massively vaulted palaces and baths of the Romans, the secluded catacombs of the early Christians, the irregular structures of the Romanesque, the lofty cathedrals of the Gothic and the studied refinements of the Renaissance building, - all an apt portrayal of their times and thoughts.

Today, we live in an age when modern inventions have to a great degree broken down the barriers of distance, of race and of language. The home builder of today may, if he so desires, import the materials which he is to use for his building from the other side of the globe, or build in a form and style as foreign to his natural elements as a wide experience and diverse education

may inspire. The masses, however, are still largely controlled by their environment and limited in their building by the materials and arts near at hand. This fact alone makes the study of the homes of a people one of the greatest importance, both from the interest and knowledge gleaned from historical research, and from the standpoint of the future development of a people along the paths that will lead to their highest uplift and produce a higher state of social order than any yet achieved.

It is an essential fact that even the most Utopian of social reformers will admit that vigor, health and consequent industry, and thus the morals of a people, are ever largely dependent upon the material conditions that surround them. While saints may grow up in sewers, - fair lilies from dung heaps, - such are the exceptions in this world where too large a proportion of the inhabitants are forced to live their lives in dusty factories, crowded homes and dingy slums, surrounded by cold and damp walls without sufficient air and sunlight, without proper sanitation, without beauty, without order. It is man's heritage that he be allowed to breathe the untainted air, drink the pure waters, and enjoy the fruits of his own labors. There may be but a modest amount of food, clothing and comfort, but enough so that he may have all the chances of perserving his good health and of providing for his children an even larger amount of the good things of this world which his labors have helped to provide.

The ever increasing growth of cities and the era of factory rule are said to be the causes of the wretched homes that are all too common a feature of nearly all nations. As the

population of the world increases and as that population seems to call for machine made articles, the people flock to work in the factories where these articles are made and which, for obvious reasons, are crowded in close to the city. Thus the housing problem ever becomes a more acute one. This is specially felt in the great eras of social unrest when the rising voice of Labor demands ever louder and louder to be heard. This voice of Labor cries for higher wages which it can usually summon, only to send the cost of production and the cost of living up to a point where the increased income is of no greater value than was the wage before the "strike" or "walkout" or whatever it may have been. Great manufacturing and industrial concerns have been forced to observe that it is not primarily the dollar that the worker is demanding, but better conditions under which he may work and live. To meet these conditions is a problem which must concern every law maker, social worker, architect and industrial organizer.

Ever and anon the cry has been raised to break up existing government or established industries when the emergency of the home question becomes too oppressive. Such are the cries of Maximalists, of Bolsheviks, of radical Reds, - whatever the age may call them. The cries are often justified and the calls answered, but the aid must be constructive, not destructive. It is often true that under better political organization, better home conditions might prevail; that under different industrial systems, different living might be enjoyed. So, as truly, if there were better homes, they themselves might be productive of the greater

politics; with better sanitation and brighter living conditions, industries might flourish with an unknown prosperity. Man's moral and political life goes hand in hand with his more material being. The two cannot be separated. He must think of building homes more soundly, more beautifully, so that his law-makers may be better trained. He must work for better laws so that his homes may be better built. Hand in hand, not pulling adversely, but together strengthened and guided one by another, social uplift must go with the art of living which is primarily the art of homemaking.

Now, there comes a time when forces of circumstance make conditions such that the more natural course of home making is suddenly interrupted. Construction comes to a sudden halt, and society is tossed pell-mell by the very laws of inertia : Again some unheralded or unforeseen force of the elements wipes out the accumulated sum of man's effort, leaving him to start anew on a clean slate, as it were, the problem of his habitation. Such catastrophes, as lamentable and disastrous as they may be to the immediate victims, offer a chance to study the redevelopment of the homes of a people in oftentimes more ideal directions and in far shorter spaces of time than normal conditions would ever permit. Recent years have offered many such examples and in offering them, have led men to a more serious, more comprehensive study of the housing problems as a whole, of industrial housing, garden cities and, more important, the emergency of the whole problem.

In taking up the subject of EMERGENCY HOUSING as it has confronted the people of the world at large and considering how the problem has been dealt with in some specific cases, it may be

well, briefly to consider first some agenda whose very existence causes the problem ever to confront the world in normal as well as abnormal times.

II. SOME PROBLEMATIC AGENDA

1. Difficulties of Housing.

From the very beginning, housing must have been one of man's most difficult problems. The cave of primitive man was dark, unsanitary and ill-fitted. In mediaeval times, families were crowded together within fortified sites which were from the necessity of feudal warfare, close, cramped and unhealthful. The housing problem as it is known in the modern world, especially in Great Britain and America, originated as a feature of the industrial revolution and the rapid crowding of the population into towns, making a problem that has seldom, if ever, been properly approached and solved. Even with the many ideas advanced in sanitary science, public health and housing legislation during the nineteenth century, there has seldom been any very marked success in the remedy or in the thorough realization of housing evils. The opening of the twentieth century displayed the problem still more intensely, but only with the almost tragic conditions resulting from the urgent demands of the Great War was any drastic action taken. Then, as never before, was felt the true strength or weakness of the main fibre of the social fabric. It was found that without decent homes, sanitary living conditions and some color in the surroundings, men will strike, social unrest will prevail to a disastrous degree, no matter how many times wages

are increased. War measures at their best are never ideal. A regime that aids construction only to promote destruction, can scarcely be expected to propitiate extensive prosperity or widespread economic welfare. With all that has been done, there are seldom enough houses to go around and the majority ^{of them} are incompetently designed, unsoundly built, and, in various ways, ^{are} destructive to the health and comfort of their occupants.

For the most part the provision of houses has been in the hands of speculative builders the world over. There are ^a few exceptions, as in America where the government, through the Emergency Fleet Corporation, has undertaken to house their workers; in England where landlords have built houses on some great town or country estate. In both countries, there was prior to the war increasing interest in town-planning with garden suburbs and cooperative building by groups of employees or by societies. In Germany, considerable success has been attained in the abolition of slums and the development of the ideal dwelling. For almost ten years before the war, however, there was no great progress in any residential building, due to the upward trend of prices and the inability of workers to pay an economic rent. The deficiency of houses and the resultant overcrowding rapidly increased. Then the war brought a dead stop to production in many lands and great material waste and destruction in others.

A difficulty, then, which first suggests the theme of "Emergency Housing", is the fact that the number of dwelling houses in most of the world is grossly inadequate for the number of people who occupy them. This may partly be due to the fact that many of

the dwellings that now encumber the earth are in the wrong places. Houses are apt to be disagreeably permanent objects in a world of quickly changing ideas and wants. Old houses may be replaced by new properties, as is so rapidly taking place in most of our great growing cities, but this calls for great expenditures of time and labor and the sacrifice of tangible property and sentimental associations. Such changes come almost in the nature of revolutions, and revolutions are always late. Providing undesirable houses could be dispensed with, it is seldom possible to revert land, once it has been "developed", back into productive agricultural land.

An English land reformer* well sums up the matter of misapplied housing energy in this manner:

"Our great towns seem to be imperishable memorials to our ancestors' lack of foresight. Many streets are too narrow; houses, factories and shops are crowded together in an inconvenient and unhealthy jumble; and yet in ninety-nine cases out of a hundred, when the buildings wear out, we replace them by loftier buildings occupying much the same area and perpetuating the old plan which everyone will admit is indefensible."

The truth of this statement is brought home when one considers the rapid growth in most any one of our great American cities. Even with all possible foresight and imagination brought to play upon the selection of sites for homes, a few years' time may show a great error; but with the present haphazard system, or want of system, under which our towns develop under the control of real estate agents, speculative builders and selfish private in-

*"New Towns, an argument for Garden Cities", J. M. Dent and Sons, Aldine House, Bedford St., Convent Gardens, London, W.C.2.

terests, nearly every phase of the housing question bids fair to come under the title of EMERGENCY HOUSING or REHOUSING.

2. The Urban Disease.

There is usually some geographic cause for the founding of a city in any definite place, although fate or chance seems often to have had a hand in it. Why the city once started should continue to grow to such unwieldy and vitally dangerous proportions seems to be due to the animal instinct of the human to herd, and to lack the initiative to seek more original modes of living.

One industry promotes another. All increase the number of the populace living in a limited district. The city's growth demands expansion. Without common interest and foresight, factories spring up in the midst of homes. The sites of natural beauty and sources of natural health are sacrificed to commercial interest. The city grows, but does not develop. It offers up its homes and gardens on the smoking altar of industry. The suburban residences make inroads upon the productive country side, making fresh food supply ever more dear and scarce to the needy urban consumer. He, shut off from his due supplies of sun and air and food, develops the first symptoms of the urban disease. His children are not apt to have much chance of escaping the microbe, and soon there is a great populace afflicted with the malady which may be called "Urbanitis". Yet, there are seldom enough homes for those who seem all too willing to risk an infection of the disease whose ultimate symptoms show crime and physical degeneracy.

The rival disease of the country is not absent from the rural communities for somewhat the same reason of improper housing. "Compagnitis" seems usually to inflict its victim with more energy as he is apt to seek a remedy by moving to the city, there only to be exposed to the worse plague of "Urbanitis". The causes of the rural disease are not difficult to find. There is so often in the country districts or small towns the lack of vitality promoted by new things, popular excitements and the sense of progress which seems to center in the cities where the streets are full of people and there is stirring activity on all sides. Compare with this the dullness of the country village whose smallness and isolation makes social tyranny almost inevitable. So many of our rural dwellers' lives have little diversity. There is but one house in which the rural dweller may live, only one school to which he may send his children, only one employer for whom he may work. In such cases there can be little sense of freedom. Ambitions are easily squelched; independence and security are hard to obtain. All of these elements tend to breed the germs of "Compagnitis", germs which the more progressive man tries to destroy by crowding into the city where, at first glance, cooperation, politics, gayety, - all seem so noisily emphatic.

The city is striving to solve the problem with all the building laws, park commissions, city planning and regulations. Many of the attempts are most commendable, but, as flexible and young as most of our American cities still are, even these good and necessary reforms have usually been found to be most difficult and expensive. All the admirable tendencies toward suburban

development and slum clearance only tend to make bigger the already oversized city, enlarging the difficulties of transfer to and from work - at best a grievous waste of man's time and energy, - and the distancing of fresh supplies of milk and food with added transport difficulties. Then with the city's growing so large, it loses the community spirit and becomes too cumbersome and unwieldy for the cooperation and spirit that originally prompted its growth. Thus it seems that the present tendency is to endeavor to cool the irritation by applying external remedies without doctoring the vital inner nature of the diseases, either "Urbanitis" or "Compagnitis".

Thus our civilization goes on building up by battling down such handicaps, striving ever for the Millennium, but so often forced back by the adversities of our social order that progress seems inexcusably impeded and, because of this, thousands must fall crushed by the wayside. From the home builders viewpoint, it seems essential that something be done to ease the fate of these fallen, to provide "The house by the side of the road" of which the ancient Greek poet sang. This must be done in response to an imperative need that makes the housing problem, whose solution is to relieve the sufferings of mankind, "EMERGENCY HOUSING".

III. CAUSES PRODUCING AN UNNATURAL DEMAND FOR NEW OR REVISED HOUSING CONDITIONS.

1. Natural Disasters.

If we lived in the age of believers in jealous Gods and resorts of a harsh Providence, it would sometimes seem that Fate, herself, took up the problem and tried to straighten out the tangles

of man and his foolish ways by sweeping out his looms and giving him a chance to commence his fabric anew. Natural disasters such as sweep over certain areas from time to time as they have throughout the ages, offer us critical examples of calls for "Emergency Housing, not only in the immediate shelter of the destitute survivors, but also in the re-establishment of their homes and institutions in the quickest possible time. In such cases, emergency housing has two aspects. First, there is the immediate need of shelter for the stricken inhabitants, a problem usually falling upon the usually overburdened shoulders of such relief organizations as the Red Cross, or upon the generosity and hospitality of neighboring cities, if such be in a position to respond. The second problem is the re-establishment of the old order or of an improved order by the rapid rebuilding of the homes ^{of} and business and social edifices, so that interrupted livelihood may again assume its normal course.

History offers notable examples of the revision of cities because of natural disasters. The burning of Rome in the time of Nero was the cause of a greatly changed capitol in a material as well as in a political sense. The classic oblivion of the cities at the base of erupting Vesuvius, while not pertinent to the subject of emergency housing, reminds one of what natural phenomena have done to man's work, and of what a disaster Nature brought upon these people, even though She did thus preserve for future generations most remarkable records of classic life and art by burying Pompeii until modern archaeologists could lift the shroud after twenty centuries of oblivion. European history offers many

examples where fire alone has wiped out towns and cities, the homes of the people being thus destroyed by thousands. Earthquakes and floods have claimed their fatal toll. Realizing the suffering and terrible hardships that such calamities can cause even in our present day of quick response ^{coming} from sympathetic generosity and with rapid transport^{-ation}, some appreciation can be had of what dreadful suffering must have been experienced because of the lack of efficient emergency housing in past times. The only cheering prospect of such disasters is the fact that Time has usually healed the wounds and seen the destroyed town or city revive upon a higher plane and with houses more adequate for the homes of a people.

2. Social and Industrial Changes.

Quite as important an element in the study of emergency housing as that of the healing of natural ravages, is the prompt provision of the homes of a people when the critical demand is brought about by some great social or industrial changes, - changes which for economic and geographical reasons must ever occur. The field and forest storehouses of uncounted wealth in America have afforded an easy solution in this sudden need of homes. Until early 1917, when the inevitable participation in a World War called thousands away from their accustomed habitations to take up new abodes in congested centers of production or trade, the problem of providing such homes did not specially harass American life. Previously, America had been used to mushroom growth of the more westerly cities, but with immense natural wealth in un-

tried territories, the housing problems of the more congested eastern cities had not been of special concern. When the demand came for intensified production in the great manufacturing plants or shipyards, naturally there had to be collected about these centers armies of men/^{a circumstance} which soon meant the proportional increase in families and the manifold accompaniments of family life. Then was the necessity of confronting the housing problems that had been faced by England, France, and no doubt all the warring nations to a more or less great degree. Such demands for emergency housing have continued to increase even with the cessation of hostilities, for in all countries the war and its accompanying shortage of men and materials for normal production, stopped building while the home demanding population went on increasing, even though at a somewhat lesser rate. This phase of emergency housing will be needed as long as social and economic conditions change.

3. War Victims.

A still more urgent demand and more vital problem of emergency housing is that of sheltering and rehabilitating the civilians from a war stricken territory, - such problems as have confronted Belgium and Northern France in an enormity probably never before equaled. In these cases a people were suddenly forced to flee from the homes of their lifetime and of their fathers before them, in front of an enemies' shell-fire. After four years of exile, they returned to start anew their lives on the aftermath of pitifully thorough armies, reapers of all that made for the charms and comforts of their old homes. The enormity of this

social tragedy as it presented itself immediately after the Armistice of 1918, and as it still exists in hundreds of villages of Northern France, makes as appealing a call as could well stir the hearts of all who respect social laws and traditions, loyalty and devotion to home and hearth-side, and humanity at large.

First aid remedies and soothing salves for the binding of the wounds and cooling of the fever of these economic and social injuries are stored within the kit-bags of architects, had they the training and spirit of public service that would prompt them to apply the remedies which, combined with other agencies, might make for permanent cure. It is then the purpose of this brief work to present some phases of the so-called "Emergency Housing" work that have come under the author's observation, hoping that even such an incomplete presentation may at least incite some thought and consideration of the housing problem that is a universally vital one.

BODY

I. THE WORLD WIDE PROBLEM OF EMERGENCY HOUSING.

The housing problem is world wide in its scope. The tragic fate of the destroyed villages of Belgium and Northern France, the wretched conditions in Poland, Serbia and Russia, the less familiar, but no less terrible, living accommodations in the various parts of the Near East and in all the land affected by the grim hands of war, are perhaps, in spite of all their urgency, no less vigorously calling for attention than the problems of our own so rapidly growing America. Approaching then the problem in the United States where growth of towns has been phenomenal and often as illogical as phenomenal when matters of permanent welfare and beautiful stability are concerned, there is still the advantage of an easy conversion to better habits and not the often hindering handicaps of age and tradition. There is also the artistic wealth of the old world by which America may profit, and especially the experiments and activities of Great Britain to offer advice in the solution of a similar problem.

The problem is that every man, woman and child may have a habitation affording fresh air and sunlight, sufficient warmth and shelter, in reasonable access to plentiful food and pure water, with necessary facilities for profitable work, clean play and sound education. The requirements do not seem unreasonable and to some may seem already attained. Such, however, cannot be "au courant" with easily accessible statistics on infant mortality, tubercu-

losis, poverty from unemployment or even employment under normal conditions, and illiteracy.

II. THE SOLUTION OF EMERGENCY HOUSING PROBLEMS AFTER GREAT NATURAL DISASTERS.

Conscious of the need and importance of Emergency Housing, there is an opportunity of turning back over the pages of historical records and gleaning some interesting facts from the critical times when the problems of housing have most urgently confronted a people, and of studying what has there been the attempted solution of the problem and the ultimate outcome. Most of the notable examples of what may be called "Emergency Housing", although perhaps the term is here used in an unprecedented way, have been caused by great disasters such as fires, floods and earthquakes. Fire was the greatest and most common scourge, playing as it did its part in warfare and the other disasters that befell cities. Except for the burnings, warfare did not in the days before the modern technique of high explosives and low ethics play such a disastrous a part in the destruction of cities.

1. Fires.

The pages of history record accounts of devastation by fire in nearly every country in the civilized world, especially before the days of fire prevention laws and the organization of adequate fire-extinguishing establishments. Since the annual fire

wastage of the world has been stated*¹ still to average some twenty-five million dollars, this one item alone bears an important relation to Emergency Housing. Ancient history records the burning of Athens during the Persian Wars and the more notorious "Great Fire" (A.D. 64) that left ten of the fourteen wards of ancient Rome in ashes after eight days of conflagration. As great as this disaster must have been to the Imperial City, Meyers calls it a blessing in disguise, as a new city of marble, with narrow, crooked streets made into broad beautiful avenues, rose from the charred remains.*² During the middle ages and notably during the 17th and 18th centuries, there were disastrous conflagrations of which thirty-five disasters of the first order are listed for Great Britain and Ireland, eight for France, twenty-seven for Central and Southern Europe, fifteen for Northern Europe, thirteen for Russia and thirty for the United States, the latter number being between the dates of 1679-1871. *³ In more recent times, there have been many more notable fires, particularly in North America, - Chicago in 1871, Baltimore in 1904, San Francisco in 1906, each being a memorable example.

*¹ Encyclopaedia Britannica: Eleventh Edition, Vol. 10. Pages 401-11.

*² ("A great part of the burnt region was appropriated by Nero for the buildings and ground of an immense palace called the Golden House of which Nero is said to have remarked, 'Now I am housed as a man ought to be'.") Meyer's Ancient History, page 498.

*³ Encyclopaedia Britannica: Eleventh Edition, Vol. 10; Page 402. X.

Of special interest from an architectural standpoint of results in rehousing, "The Great Fire" of London (September 2-6, 1665) stands out with special conspicuousness as the setting for the great accomplishment of Sir Christopher Wren (1632-1723), who was thus given an opportunity to remake the plans for the world's metropolis.

Due to the crowded and unsanitary conditions of the housing, London of the middle ages and even up into the late years of the 17th century, was often the seat of ravaging plagues. One that is best known to history as the "great plague" broke out in December, 1664. An account from the Diary of Samuel Pepys tells of how,

"I have stayed in the city till about 74,000 died in one week, and of them about 60,000 of the plague and little noise is heard day or night, but the tolling of bells.-" September 4, 1665; Samuel Pepys to Lady Carteret from Woolwich.

It was on the trail of this plague that the "Great Fire" of London broke out. In the rescue and emergency shelter work, we find descriptions of how the Thames swarmed with vessels trying to carry away the people and their rescued goods. Many people fled to erect such shelter as they could in the hills of old Hampsted and Highgate, and the swampy places of Moorsfield became a popular resort. The people bore their disaster heroically for Henry Oldenburg writing to the Hon. Robert Boyle, September 10, 1666, says:

"The citizens, instead of complaining, discoursed almost of nothing but of a survey for rebuilding the city with bricks and with large streets." *1

*1 Ency. Brit., Eleventh Edition, Vol. 16, Page 963.

Christopher Wren, as well as other architects, presented the king with plans for rebuilding the city. Wren's plans called for -

"main thoroughfares north and south, and east and west, to insulate all the churches in conspicuous positions, to form the most public places into large piazzas, to unite the halls of the twelve chief companies into one regular square annexed to Guildhall and to make a fine quay on the bank of the river from Blackfriars to the Tower. The streets were to be of three magnitudes - 90 feet, 60 feet and 30 feet wide respectively. In spite of the best advice, however, the jealousies of the citizens prevented any systematic design from being carried out; and in consequence, the old lines were in almost every case retained." *1

In spite of this quotation, we know that the influence of Wren, combined with that of Evelyn, was great in determining the plans of a new and greater London, for to Wren's personal art, we are indebted for the creation of the cathedral of St. Paul and the lesser, though even more charming, London churches that play so important a part in the plan of the great city. To an architect by the name of Hooke fell the tasks of city-surveyor and housing expert. His tasks must have been the humble and urgent, if less monumental, ones, for Evelyn records that the town grew almost as large again after the Great Fire which caused a total loss of property at that time estimated to be 10,730,500. pounds.

Other great European fires that have terribly forced upon nations the necessity of emergency housing have been many: the fire at Hamburg (May 5-7, 1842) made homeless one-fifth of the population, destroying nearly 5000 buildings at a property loss of about 30,000,000 marks: the Communist devastation of Paris in 1871

*1 Henry Wheatley, F.S.A., History of London. (Medieval Towns), Pub. London 1904. p. 116-

caused a property loss of about 160,000,000 francs: the firing of Moscow on September 12, 1812, to drive out the army of Napoleon, destroyed all but a tenth of the city and swept out 30,800 homes at a loss, estimated by an English authority, *1 of 30,000,000 pounds.

In America, the Great Fire of Boston (November 9 - 10, 1872) destroyed the richest quarter of the city. Starting at the corner of Summer and Kingston streets, it burned over an area of sixty-five acres, destroying 776 buildings estimated at a value of \$75,000,000 at that time. In less than four years this burned district had been rebuilt more substantially than ever. New York in 1835 and 1845, Philadelphia in 1850, Washington during the war of 1812, and Baltimore, Salem and San Francisco in recent years have suffered great fire losses. The conflagration that stands out as "The Greatest Fire of Modern Times" is that of Chicago in 1871. On the evening of the eighth of October, it is supposed to have started from an oil lamp kicked over in a cow-barn. Three and one-half square miles (2124 acres) in the heart of the city were laid waste. Reports have it that 250 lives were lost, 98,500 persons were made homeless and 17,500 buildings were consumed with an estimated loss of \$195,000,000. Again, within a space not exceeding four years, all the burned area was practically rebuilt, - not along lines that can make it other than one of the most uninteresting, artistically, of American cities for years to come, - but with a speed and material efficiency that shows how great would have been the possibilities had there been a public trained in the appreciation

*1 (Ency. Brit. 11th E. V. 16, p. 963.)

of architectural values and men capable of advancing the tastes while catering to public demands.

2. Floods.

The emergency housing problems after floods and earthquakes have been much less frequent than those after fire. The marked feature of all such disasters is the suddenness and unexpectedness of the catastrophe which paralyzes certain types of human beings, brings out the fierce animal in others and disorganizes society in the sudden claims for self-preservation. Noah with his ark is the unique traditional instance where the emergency housing problem could be materialized in advance of a flood.

One of the great European disasters resulting from earthquake, fire and flood, was that which overcame the city of Lisbon on November 1, 1775. The city was destroyed almost instantly. Between thirty and forty thousand people lost their lives and 20,000,000 pounds worth of property was the estimated loss at that time.

In America, the destruction of the Pennsylvanian city of Johnstown in 1889 by the breaking of the dam confining an artificial lake, caused the loss of more than two thousand lives as a mass of water twenty feet high swept down the valley at a terrific speed, very nearly completely destroying the city. The city was quickly rebuilt after a relief fund of nearly \$3,000,000 had been raised by popular subscription. Neither the Johnstown nor the later Galveston flood introduced much lasting thought upon the possibilities of emergency housing, and architecturally, these disasters

1.



The rising water,- Dayton, Ohio, 1913.

2.



Relief Housing in the Tent City.
Dayton, Ohio, 1913.

See text, page 25.



The Flood in Dayton, Ohio, March, 1913.

2.



Clearing away the debris after
the subsidence of the flood.
Dayton, Ohio, 1913.

See text, page 25.

offer no interest.

The flood*that inundated Dayton, Ohio, in the early spring of 1913 was remarkable for the small loss of life from such a great disaster and the promptness with which the people recovered with a slogan for "A greater, bigger Dayton". The disaster led to serious study of the "Flood Prevention of the Mississippi Valley" *1 which will eventually lead to the protection of hundreds of middle western towns and their wealth of human lives and material property. Even though a large area including the most highly developed part of the city was inundated with rushing river water that upon its subsidence left a reeking mass of mud and slimy detritus, the superb response of the people to cooperate in the cleaning of the city and the capable direction of relief by public minded citizens made a sanitary city flourish again within the year and gave an impetus for better designed homes, improved municipal buildings and water-fronts.

The immediate problem of housing the people of Dayton after the flood was cared for with such a spirit of cooperation from neighboring towns that it did not demand other consideration beyond the tent city*that was erected on the grounds of the National Cash Register Company, and which serves as an admirable example of the solution of the emergency shelter problem. While the emergency housing was rapidly solved in Dayton, Hamilton and other towns, the people were determined that the disaster should not occur again. The Miami Conservancy District is the result.

*See illustrations, pages 23, 24. ** See page 25.

Miami Valley Flood Prevention Work, Alvord, U. of Ill. (q. 624.4, Oh. 54)

*1. Morgan, Arthur E., Chief Engineer, Miami Conservancy District
See Publication of S.P. Association, New Orleans., "Homes for Working-men", page 149.

Here the building of five great dams across the Miami Valley and its tributary streams has introduced another Emergency Housing problem on account of the several thousand men employed on the building of these dams. Camps have been built that are almost like suburban villages, picturesquely and properly located and made up of broad-roofed cottages of five different types, - all simple in design and inexpensive in construction, but combined to make attractive and livable homes, models for many a great enterprise that claims the exacting attention of men over a long period of time.

3. Earthquakes.

Of the great emergency housing problems resulting from earthquakes, perhaps that of San Francisco in 1906 is the catastrophe of greatest import of that nature in modern times. While earthquakes had not been uncommon in California, they had not caused any very serious trouble until the morning of the 18th of April, 1906. The damage to buildings in San Francisco was, however, small in comparison with the damage wrought by the fire which started soon after the first shock and which, due to the breaking of the water mains, was beyond control for nearly three days. About half of the population was turned out of doors. An estimated number of two hundred thousand people were camped in Golden Gate Park; fifty thousand in the military reservation. A committee of safety and emergency control was organized by the city authorities acting in conjunction with General Funston. This

body took immediate measures for the prevention of famine and disease. Permanent camps were established for the homeless and those who could not be removed to other cities. Within a week about \$10,000,000 had been subscribed by the people of the United States. Congress appropriated \$2,500,000 from the National Treasury for relief shelter, and foreign countries sent money and supplies. A committee of the Red Cross Society was put in charge of the relief work and their reports of 1908 show that \$9,225,000 had been expended for the relief of the hungry, for the sick and injured and for housing and rehabilitation of individuals and families.

In spite of the fact that there was an estimated loss of \$105,000,000 in buildings alone, reconstruction of the burned area began at once. The great difficulties that confronted the rebuilders was the usual lack of cooperation that would permit of benefit from the unique opportunity for an improved city plan. Due to the great demand and scarcity of labor, as well as the action of the labor unions, wages rose to enormous rates. Prices of materials and terrific transport rates added to the difficulties. In spite of all, within three years San Francisco was again a restored city, and in 1915, she was prepared to welcome the world as her guests at one of the largest and, architecturally at least, one of the most magnificent expositions that modern times have been permitted to witness.

As a permanent restoration and as an ideal city plan, the emergency housing and rebuilding of San Francisco must, however, appeal to one only as a regrettable loss of great opportunities,



After the cyclone, Mattoon, Ill.



Cyclone destruction, Mattoon, Ill.

See text, page 29.

not only for a beautiful but for a healthfully progressing city.

To quote from a report of "The Housing of the Unskilled Wage Earner."

"If there had been a national or state system of supplying credit for housing purposes, the San Francisco disaster would have afforded a wonderful opportunity to rebuild the congested districts on model lines. As it was, the need of immediate shelter was so great, and private capital had been rendered so timid by the earthquake, that all bars were let down, and even the inadequate restrictions of the old building code were suspended. The result was that tenements were built in great numbers, covering one hundred per cent of their lots and dark-room problems were created which will effect San Francisco for many a long year." *1

4. Cyclone.

In May, 1917, an unusual devastation occurred in central Illinois when a cyclone swept a quick and irregular course across the level prairie, rendering the buildings of a small section into splinters and doing odd tricks to whatever came within its course. A portion of the small town of Mattoon was destroyed.² An attempt was made by the Architectural Department of the University of Illinois to lend suggestions in rehousing plans and designs for the rapid rebuilding of the stricken areas. The schemes were not executed as the inhabitants were able to find other homes in the larger part of the town which escaped, or were called to other localities by the great war activities which were then beginning to engage the efforts of American industries.

*1 "The Housing of the Unskilled Wage Earner", by E. E. Wood, Pages 20 - 21; Macmillan Company, Publishers, 1919.

*2 See illustrations, page 28.

III. AMERICA'S ATTEMPT TO SOLVE THE EMERGENCY HOUSING PROBLEMS THROUGH GOVERNMENTAL PATRONAGE.

1. The American Standards of "Rights of Home" as Formulated by Housing Surveys.

It was during 1917 and 1918 that abnormal activities, introduced by America's participation in the World War, produced the greatest emergency housing problems in this country. During this period, millions of American workmen left their former homes and moved to the neighborhoods of new or greatly enlarged manufacturing plants, shipyards or army camps, there to work directly or indirectly on the solution of the gigantic supply demands of the great war problem. They quickly overtaxed the former, oftentimes barely adequate, housing facilities. Beds were crowded thickly into small, poorly ventilated rooms, there to be used for three shifts in each twenty-four hours. Men became predominately animal as they crowded one another for sleeping space. Profiteering landlords grew rich. Speculative builders, even with a sense of social obligation, could not cope with the problem which so soon became far beyond their organization and powers of credit.

As poorly prepared as America was to offer a solution of the problem of emergency housing, she had the experiences of Great Britain by which to profit. She had some few men trained to a comprehension and appreciation of the problem, and, above all, she possessed a civic sense that recognized the importance of cooperation and spontaneity of effort. Housing committees had been or-

ganized to study the problem in many American cities. Delegates had been abroad to study the English Garden Cities and the German tenement solution. Health Commissions and Social Service Boards had been active in local and disconnected fields. Such were bearing fruit as may be seen by quoting from one of many excellent reports.

The Housing Committee of the Minneapolis Civic and Commerce Association in September, 1914, ended a report on housing problems in Minneapolis with these words:-

"A new spirit is developing in industry, a spirit born of the realization that all industry suffers through the misfortune of any factor. The employer fails to prosper as his men fail to prosper. Bad housing for the workman means bad business for the one who hires. In the light of this spirit, the primary question is not 'What can the tenant afford?' It is 'What can Minneapolis afford?' If we are to develop in the highest type of civilization, if industry is to thrive permanently, we must first recognize as an essential prerequisite to the realization of these high ideals, the providing of home life for every family, rich or poor, that shall insure to them their inalienable rights of sanitation, safety, ventilation, privacy, sunlight, space and beauty."

There have been other admirable housing surveys well worth quoting if space permitted, such as the reports of the "New York Tenement House Commission", "Housing Conditions in Chicago" by the School of Civics and Philanthropy, "Reports of the Californian Commission of Immigration and Housing", while the report*1 of John Nolen to the Bridgeport Chamber of Commerce is a valuable contribution. Reference should also be made to the efforts of Charles Harris Whitaker, Editor of the Journal of the

*1 Nolen, "More Houses for Bridgeport", August, 1916, p. 28.

American Institute of Architects, Frederick L. Ackerman, Architect, Richard S. Childs, Secretary of the Committee on Industrial Towns, N.Y.C., and Edith Elmer Wood, Expert in Housing Legislation, Philadelphia, - all of whom have done valiant work in putting the Emergency Housing problem before the American public in its proper light and proportions.

Some notable prewar foreign housing projects that were valuable examples for America's Emergency Housing problem, may not well be neglected in citing determining influences. Of these, Port Sunlight on the outskirts of Liverpool, created by Sir William Lever, and Bournville, started by George Cadbury, the cocoa manufacturer of Birmingham, are perhaps most notable examples. In Germany, Alfred Krupp began in 1861 to build model homes for his employees and Margarethenhohe, on the outskirts of Essen, developed into a very beautiful housing scheme where, before the war, nearly 50,000 people were housed by the Krupp undertaking.

Successful examples of industrial housing in this country that helped to pave the way for the War Emergency Housing problem had been established in many, though far too few, places under private initiative, previous to 1917. These were administered either through Philanthropic Trust Funds, Limited Dividend Companies, Cooperative Building Companies, etc. Mention may well be made of such initial attempts to better housing conditions as, -

Billercia, Massachusetts, Boston and Main R.R. Shops.
Eclipse Park, Beloit, Wisconsin, Fairbank Morse Company.
Forest Hills, Long Island, N.Y. (Russel Sage Foundation).
Goodyear Heights, Akron, Ohio, Goodyear Rubber Company.
Hauto, Pennsylvania, Lehigh Coal & Navigation Company.

Hopedale, Massachusetts, Draper Company.
 Indian Hill, Massachusetts, Norton Grindling Company of
 Worcester.
 Kistler, Pennsylvania
 Leclaire, Illinois, near St. Louis.
 Marcus Hook, near Chester, Pennsylvania, Viscose Company
 Morgan Park, Duluth, Minnesota, Minnesota Steel Corporation
 Nanticoke, Pennsylvania, Delaware and Lackawanna
 Coal Company.
 Octavia Hill Association of Philadelphia.
 Pullman (1881) Illinois, now incorporated in the city of
 Chicago.
 Roebling, New Jersey, near Trenton.
 Titus Town, Virginia.
 Torrance, California.

It was in August, 1917, that, largely through the efforts
 of Samuel Gompers, a subcommittee on Labor of the Advisory Com-
 mission of the Council of National Defense was appointed to form
 a housing section with Philip Hess as chairman. The investigation
 reported a very serious situation rapidly increasing in serious-
 ness as discontent, strikes, and consequential delay in the comple-
 tion of ships and war materials was more than threatened. On
 October 9, 1917, the Council of National Defense appointed a hous-
 ing committee with Otto M. Eidletz of New York, chairman. From
 its report on November 2, we read, -

"It is the opinion of the committee on housing
 that the existing emergency demands immediate action
 and it is convinced that under proper safeguards the
 Government shall give quick financial aid to such indus-
 tries or communities as can clearly demonstrate their
 right to relief."

Thus in a short time, although due credit should be given
 to the workers who had paved the way, there was established govern-
 mental recognition of the necessity of aid in the solution of the
 housing problem, - a recognition which under more normal circum-

stances would have required years of patient educational work.

In February, 1918, Congress appropriated \$50,000,000 for housing under the Shipping Board, and in May came an appropriation of \$60,000,000 (of which \$10,000,000 was reserved by the act for Washington, D.C.) for the Labor Department to use for other war workers' homes. This branch of the work of the Labor Department came under the direction of Otto M. Eidlitz. Later a second appropriation of \$40,000,000 was made, although Mr. Eidlitz had asked that it be \$100,000,000. By September, 1918, all this seemingly huge sum had been allotted among about sixty-five localities for the housing of the army of civilian producers for the army and navy.

Summing up the many and varied requirements from a rather large amount of literature upon the needs and ideals which the industrial housing projects sought to gratify, it would seem that they may be condensed into another less famous, though one may trust less alterable, "fourteen points". It is concluded that the requirements of "Rights of Home" as formulized by housing surveys would grant to every normal family as their just inheritance and return for normal talent and industry the following:

1. A safe and sanitary home.
2. Healthful and beneficial surroundings.
3. Rooms of sufficient size and number to decently house the members of the family.
4. Adequate sunlight and ventilation.
5. Ample and pure running water inside the house.
6. Modern and sanitary toilet conveniences for its exclusive use, located inside the building.
7. Privacy.
8. Freedom from dampness.
9. Conveniency to work and schools.

10. Conveniency in the arrangement of the house.
11. Prompt, adequate collection of all waste material.
12. Reasonable fire protection.
13. Colorful surroundings.
14. Rental not to exceed 20% of family income.

2. Ordnance Department Housing.

The first and most urgent problem to confront the industrial housing commission was the accommodation of the temporary workmen, men who in large armies left their families in order to work as unskilled laborers or as tradesmen in some center of activity. The boarding-house has ever been too often a disruptable apology of a home for this type of worker, but even the boarding-house could no longer attempt to accommodate the hordes of workers necessary to the progress of war production. First, to satisfy this want, the housing commission approved of the erection in various centers of congested communities, dormitory barracks with the necessary dining-rooms, kitchens, stores, hospitals, etc. Erected in the quickest possible time under forced circumstances, this type of housing can be thought of as having no lasting value. Architecturally, only the matter of highest conveniency called for the skill of the designer in the matter of plan arrangement and disposition of units. Ordnance Department Housing, as this type of building was classified, was near akin to the planning of military camps themselves and hardly more permanent, either in its need or construction.

Notable examples where Ordnance Department Housing came to play a most important part in the war's industrial work

are cited in the following list.

ORDNANCE DEPARTMENT HOUSING

<u>Place</u>	<u>Composition</u>	<u>Man Capa-</u> <u>city</u>
Bethlehem, Pa.	* 16 dorm., dining hall	960
Brunswick, Ga.	636 ds., 12 dorms., cafe, etc.	1600
Edgewood, N.J.	Dorms., barracks	5000
Erie, Pa.	738 ds., apts., dorms., etc.	2200
Hammondton, N.J.	Dorms., barracks	1550
Mays Landing, N.J.	193 ds., 46 dorms., sch., etc.	2776
Morgan, N.J.	Ds., apts., dorms., com. bldg., etc.	1500
Muscle Shoals, Ala.	1300 ds., sch., stores, etc.	2600
Neville Island, Pa.	12 dorms., stores, etc.	3072
Nitro, W. Va.	1850 ds., 33 dorms., schs., etc.	5400
Old Hickory, Tenn.	1703 ds., 33 dorms., etc.	10302
Penniman, Va.	448 ds. and apts., 11 dorms., etc.	5918
Perryville, Md.	87 ds., 3 com. bldgs., etc.	220
Sheffield, Ala.	300 ds., 2 dorms., hospital	650
Tullytown, Pa.	14 ds., 8 dorms., hospital	230
Woodbury, N.J.	12 dorms., 12 converted houses	850

3. Emergency Fleet Corporation Housing Program.

It was toward the attainment of the fourteen points of "Rights of Home" that the Emergency Fleet Corporation housing projects strove. Many of the schemes had already been begun for independent companies of ship-builders or manufacturers by architectural firms that were prepared to give their best services to the important work. The governmental support and cooperation enabled them to promote their schemes at a more rapid pace than could otherwise have been done. While the necessary speed in the design and haste in the construction upon a "cost plus" basis, made conditions far from ideal toward producing the best of industrial town-plans, yet the results at the time of the armistice, after which further governmental support was curtailed, showed that a de-

* ds.-dwellings: apts.-apartment houses: dorms.-dormitories.

cided advance had been made in the art of industrial housing under emergency conditions, an advance beyond anything that had previously been seen in this country.

The list of developments undertaken by the Industrial Housing Board of the Emergency Fleet Corporation are here given alphabetically under the name of the place where the houses were built, together with the names of the architects in immediate charge of the separate projects and a brief summary of the problem.

EMERGENCY FLEET CORPORATION HOUSING PROJECTS

<u>Place</u>	<u>Architect</u>	<u>Problem</u>
Bath, Maine.	R. Clipston Sturgis, Boston.	* 90 ds., 6 dorms. with mess-hall to accommodate 288 men.
Bristol, Pa.	Carrol H. Pratt, New York City.	42 bachelor quar- ters for 840 men; 14 boarding houses for 840 men; 20 apts. for 250; 258 dwellings; one school.
Candem, N. J.	Electus Litchfield, New York City.	2,107 ds.
Chester, Pa.	Simon and Bassett Ed. Brumbaugh, Philadelphia, Pa.	227 ds., 1 board- ing house for 25; 25 apts. for 219; 1 hotel.
Chester, Pa.	Earnest Flagg, New York City.	548 ds.
Essington, Pa.	C. W. Braser, New York City.	200 ds., 1 apt.
Essington, Pa.	Durling, Okie & Ziegler, Philadelphia, Pa.	6 dorms. for 500; Mess-hall & re- creation rooms.
Glouster, N. J.	Bissell & Sinkler, Philadelphia, Pa.	500 ds.
Jacksonville, Fla.	H. T. Klutho,	165 ds., 3 board- ing houses for 86
Lorain, Ohio	Abram Garfield Cleveland, Ohio	244 ds., 2 apts. 1 school.

*ds.-dwellings: apts.-apartment houses:-dorms.-dormitories.

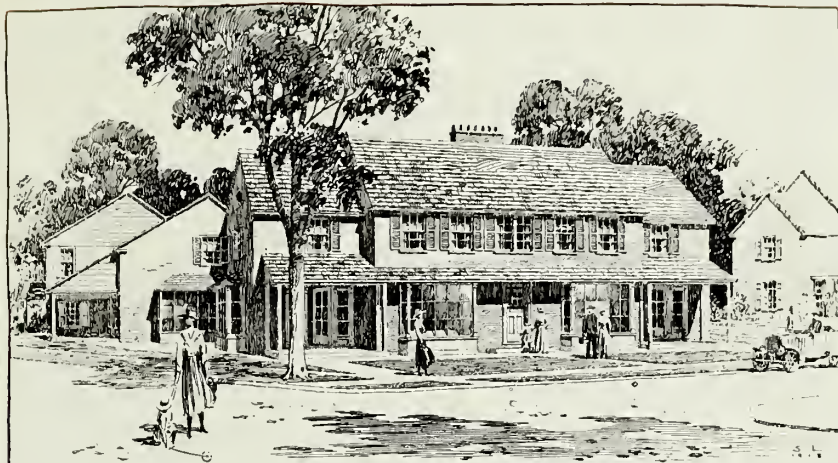
<u>Place</u>	<u>Architect</u>	<u>Problem</u>
Manitowoc, Wis.	Earle Frank Miller, Manitowoc, Wisconsin.	100 ds., 1 dorm. for 300.
Newport News, Va.	F. Y. Joannes, New York City.	50 ds., 4 apts. for 372.
Pensacola, Fla.		200 ds..
Philadelphia, Pa.	George M. Barlett, New York, New York.	960 ds., 16 dorms. for 800.
Portsmouth, N. H.	Kilham & Hopkins, Boston.	300 ds., 8 dorms. for 400; 1 school.
Port Jefferson, N. Y.	A. C. Bossom, New York City.	9 ds., 1 dorm. for 400.
Savannah, Ga.		200 ds., 1 hotel for 180; boarding house for 255.
Sparrows Point, Md.	E. L. Palmer, Jr., Baltimore, Md.	827 ds., school, stores, etc.
Vancouver, Wash.		100 ds. and hotel.
Wilmington, Del.	Ballinger & Perrot, Philadelphia, Pa.	506 ds., 3 apts. for 51, community bldg., school,
Wyandotte, Michigan		200 ds..

* ds. - dwellings; apts. - apartment houses; dorm. - dormitory.

Naturally each project offered a separate problem due to the requirements of housing, the class of people who were to occupy them, the available site with all its numerous and diverse elements of soil, contours, natural and economic setting, climate, traditions of style and all the many other conditions that enter into architectural design in such a diversity of places.

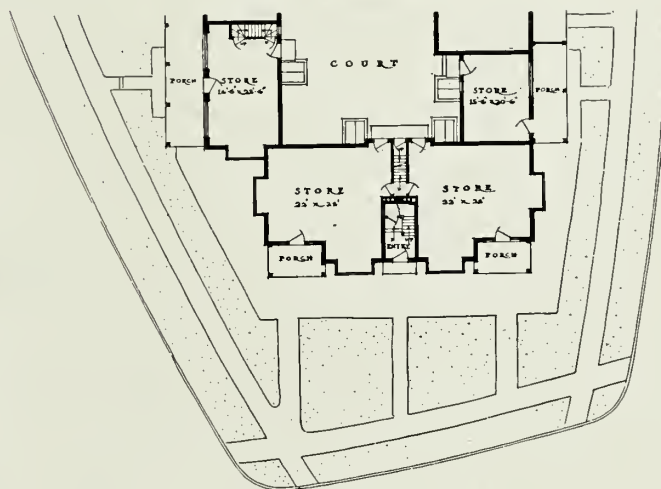
In spite of this diversity to be found in each of the twenty odd projects of the larger order which were undertaken under the supervision of the Housing Board of the Emergency Fleet Corporation, a detailed description of one will suffice to explain some of the chief characteristics and common problems of all. The problem that confronted the Chester Shipbuilding Company of Chester, Pennsylvania, may be taken as a typical example, not that its solution, though apparently successful, was superior or more worthy of notice than many others, but because of the writer's larger responsibility and interest in the solution of this design.

Early in 1917, a rough census of the town of Chester gave an estimate of comfortable living accommodations for about 40,000 persons. Within six months of that time, it was estimated that nearly twice that number of people were trying to live in these same quarters. The simple cause of this congestion was the fact that the Chester Shipbuilding Company, the Sun Shipbuilding Company, and other great companies producing urgently needed war materials, were bringing people to the already thickly settled Delaware river valley, and that this same demand for laborers of all kinds had interrupted even the inadequate growth of housing facilities. The



STORE GROUP

Scale 0 10 20 30 Feet



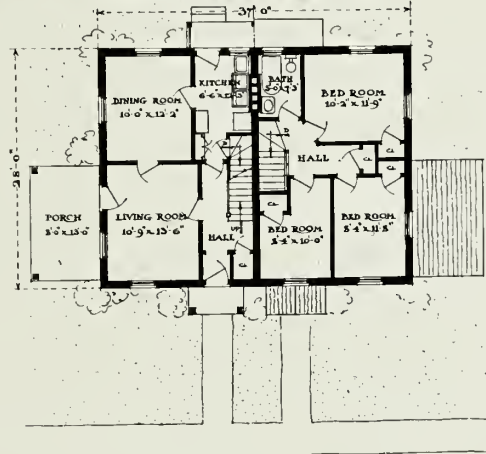
FIRST FLOOR PLAN

BUCKMAN VILLAGE CHESTER PA
 UNITED STATES SHIPPING BOARD
 EMERGENCY FLEET CORPORATION
 BRUMBAUGH ~ SIMON & BASSETT RETAINED ARCHITECTS PHILA PA



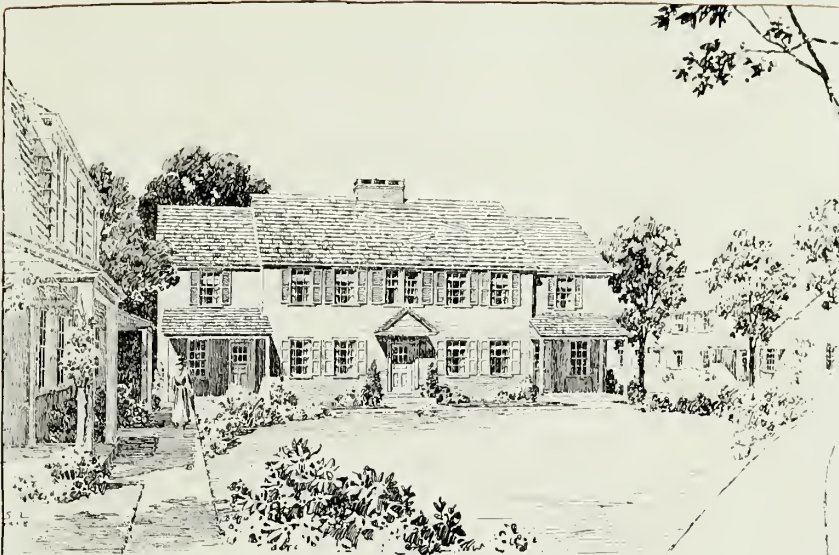
SEMI-DETACHED HOUSES

Scale 0 10 20 Feet



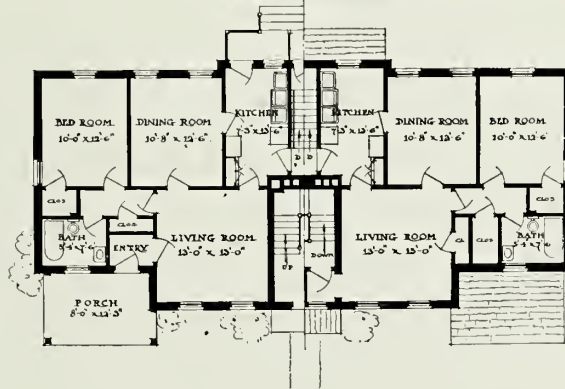
FIRST FLOOR PLAN SECOND FLOOR PLAN

BUCKMAN VILLAGE CHESTER PA
 UNITED STATES SHIPPING BOARD
 EMERGENCY FLEET CORPORATION
 BRUMBAUGH - SIMON & BASSETT RETAINED ARCHITECTS PHILA PA



FOUR-FAMILY APARTMENT-HOUSE

Scale 0 5 10 15 20 feet



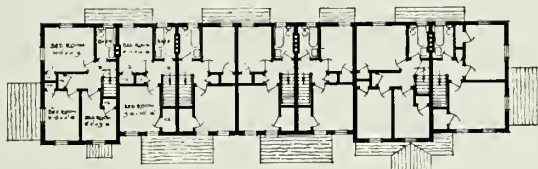
FIRST FLOOR PLAN

SECOND FLOOR PLAN

BUCKMAN VILLAGE CHESTER PA
 UNITED STATES SHIPPING BOARD
 EMERGENCY FLEET CORPORATION
 BRUMBAUGH ~ SIMON & BASSETT RETAINED ARCHITECTS PHILA PA

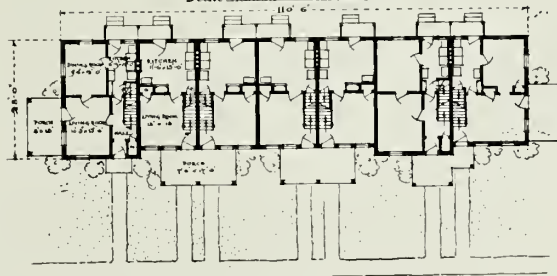


SEVEN FAMILY ROW HOUSES



SECOND FLOOR PLAN

Scale 0 10 20 30 Feet



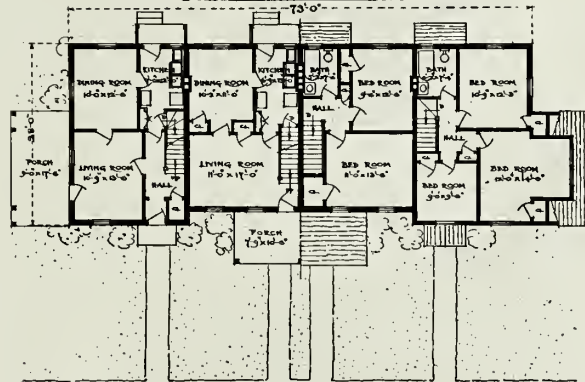
FIRST FLOOR PLAN

BUCKMAN VILLAGE CHESTER PA
 UNITED STATES SHIPPING BOARD
 EMERGENCY FLEET CORPORATION
 BRUMBAUGH - SIMON & BASSETT RETAINED ARCHITECTS PHILA PA



FOUR-FAMILY ROW HOUSES

Scale 0 5 10 15 20 Feet



FIRST FLOOR PLAN

SECOND FLOOR PLAN

THE EMERGENCY FLEET CORPORATION U-S-S-B
HOUSING AT CHESTER PA

BRUMBAUGH - SIMON AND BASSETT ARCHITECTS PHILADELPHIA PA

crowded and sickening conditions under which men and even families were forced to live was fast breeding social disease manifest in strikes, walk-outs, inefficient labor and crime, especially among the lower class of unskilled laborers.

A farm site of some forty acres situated just outside the city limits, but easily accessible to town, river and ship-yards, seemed to suggest a partial solution for building area. Upon this plot it was decided to erect houses that would tend to ease the congestion to some degree in the shortest time consistent with studied design and permanent building. The site was an irregular, rolling, partially wooded farm whose contours immediately suggested curved streets to accommodate the houses and the traffic. The problem was to house^{*} comfortably as many families as possible in four-room apartments, ^{roomed} ~~five~~-or six-roomed semi-detached or grouped houses, with boarding house, dining room and club house for single men. With two-type plans, one for five-room and one for six-room houses, by means of combinations of two, four, five, six and seven houses in attached groups, interesting combinations of units were formed and placed in such a way as to give great variety throughout the whole village. The Pennsylvania farm house, colonial style of architecture was chosen for the design. A variation in the use of brick, stucco and frame, with painted shutters and trim, permitted further interest, while gently curving streets and a studied irregularity of house line, though perhaps unnatural and thus forced in a factory made village, did prevent the monotony so common to many housing projects.

* See illustrations, pages 41-45, inclusive.

Careful study produced an arrangement of 227 dwellings, one boarding-house for twenty-five, twenty-three apartments for 319, one hotel and a club house, all with ample streets and private yards, wooded playground area on the lowland and a general preservation of the rather numerous fine specimens of forest trees. The streets were of two widths (40' and 60' in relation to importance) with no grades exceeding ten per cent. The streets gave direct access to the front of every house while 12' paved service alleys connected the rear yards of each attached house with the main thoroughfares. "Buckman Village" was the name given to the development.

4. Specific Architectural Lessons Learned.

Judging from the experience of the Chester development and a survey of other big undertakings of similar nature, a series of general deductions may well be made relative to nearly any or all emergency housing schemes that are to have permanent results of any long duration.

1. Selection of land should be made in secret to prevent speculation.

2. The site, usually suburban or open country, should be within walking distance, (15 minutes), from the factory or center of employment. Cheap and rapid transfer facilities should be provided from greater distances, although easy walking distance is preferable.

3. The land value should be low, (\$500 or less for unskilled workers, \$1,000 an acre for skilled workers.) The cost of public utilities, sewers, sidewalks, water, curbing and rough grading amount to about \$3,000 per acre at prewar prices. Landscaping to the extent of finished grading, turfing, seeding and planting may be done conservatively for less than \$4,000*. The house con-

* Estimate, Philadelphia, 1918.

struction under normal conditions ought to come to about .30¢ per cubic foot, which would make the average development per acre cost about \$30,000. Any such figures must at best be far from definite in their generality.

4. Large tracts (100 - 200 acres) give better opportunities for providing a complete local community with open spaces, shops, amusements, public buildings, etc., and reduce the average cost of public utilities such as water, sewerage disposal, etc.

5. The contours of a site should be respected. With sharp topography, the development is apt to be inconvenient and costly; with flat topography the result is in danger of being monotonous and ill drained; a medium condition of contour becomes most satisfactory. Reserve flat areas for factory sites, broken or marsh lands for parks and public reservations.

6. Thoroughfares:- The location of streets and roads becomes one of the first considerations of a town layout, influenced as they usually are by pre-existing streets and topography. Upon the roads depend the profitable use and development of the property. The main streets should be broader, more directly connecting important points, than the local streets which are secondary, forty feet from property line to property line being sufficient for the later. Group houses usually necessitate service alleys which in all other cases should be avoided. *1 (See pages 50, 52.)

7. Shape and size of blocks: - The streets divide the whole plot into blocks which may well be varying in shape and size, although rectangular shapes work out to better advantage. A block 700 feet long by 200 feet deep may be given as an average size. (See pages 50, 52)

8. Shape and sizes of lots: - The proportions of lots naturally depend upon the blocks. A minimum of lot widths ought to be 15 - 16 feet for group buildings (as no plan has yet been devised where convenient living space can be arranged in less), 25 - 30 feet for semi-detached houses, 40 - 50 feet for detached dwellings. (Page 55)

9. Number of houses per acre: - This naturally depends much upon the type of the house. For houses built in rows or groups, 18 houses per acre ought to be

*1 U. S. Housing Ordnance Data. Journal A.I.A., Vols. 6, 7, 8. 1918
These data noted from directions issued by Housing-board.

the limit; while for detached houses, 5 - 7 per acre would be the maximum. Minimum space between buildings ought to be 16 feet, - between backs of houses 50 feet.

10. Types of houses: - Many conditions of cost, standards, locality, customs and traditions enter into the house types, but it is agreed that American standards of family life ought to demand as a minimum for a home 4 rooms, - parlor, kitchen, 2 bedrooms and bath, though a five-room house is preferable with three bedrooms, allowing separate rooms for older children of different sexes. (See pages 41-45, 53, 54, 56.)

With this brief consideration of some of the more essential features for the solution of the emergency housing problem provoked by the industrial changes within our civil life, there comes the hope that the work has but begun. May the future be prepared to meet the emergency and in that preparedness produce a stronger, more durable, more beautiful fibre for our national fabric. For, to quote the words of the late Secretary of Labor, the vital aspect of the whole problem is plainly given in Mr. Wilson's words: -

"The man who owns his home is the least susceptible to the so-called Bolshevik doctrines and is about the last man to join in the industrial disturbances fomented by the radical agitators. Owning a home gives a man an added sense of responsibility to the national and local government that makes for the best type of citizenship."

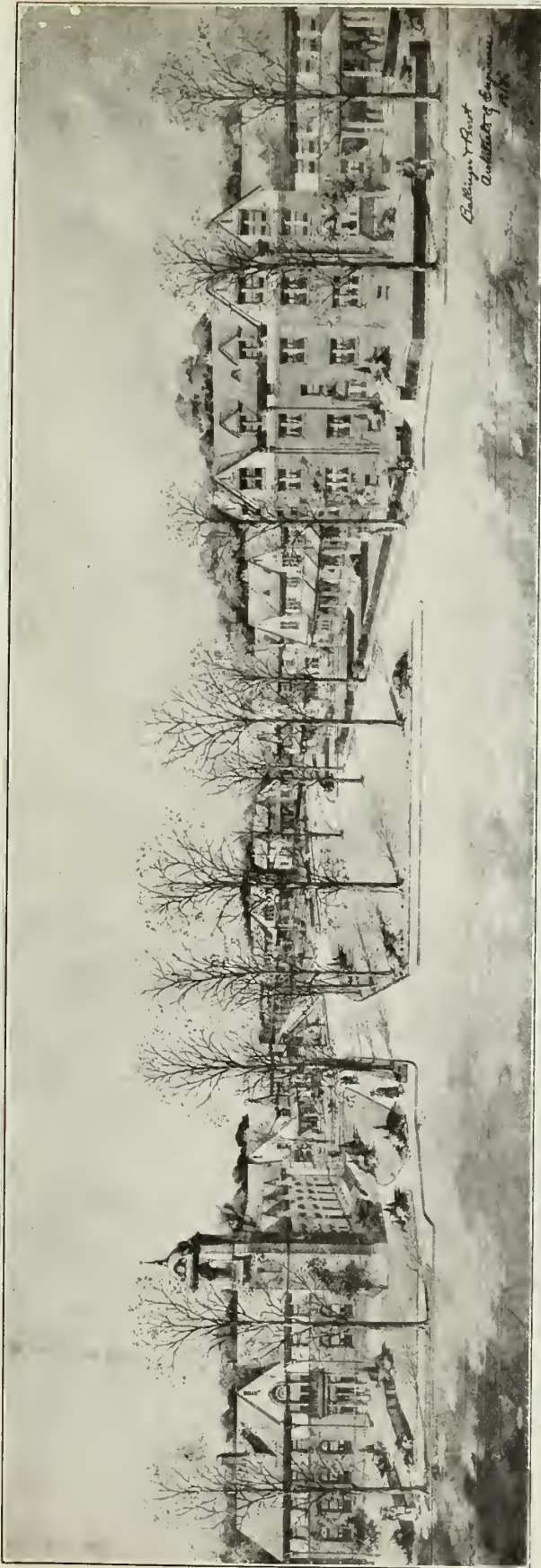


The solution of an Industrial Housing problem, typical of the Emergency Housing brought about by the economic conditions of war production.

Ballinger and Torrot,
Architects and
Engineers.

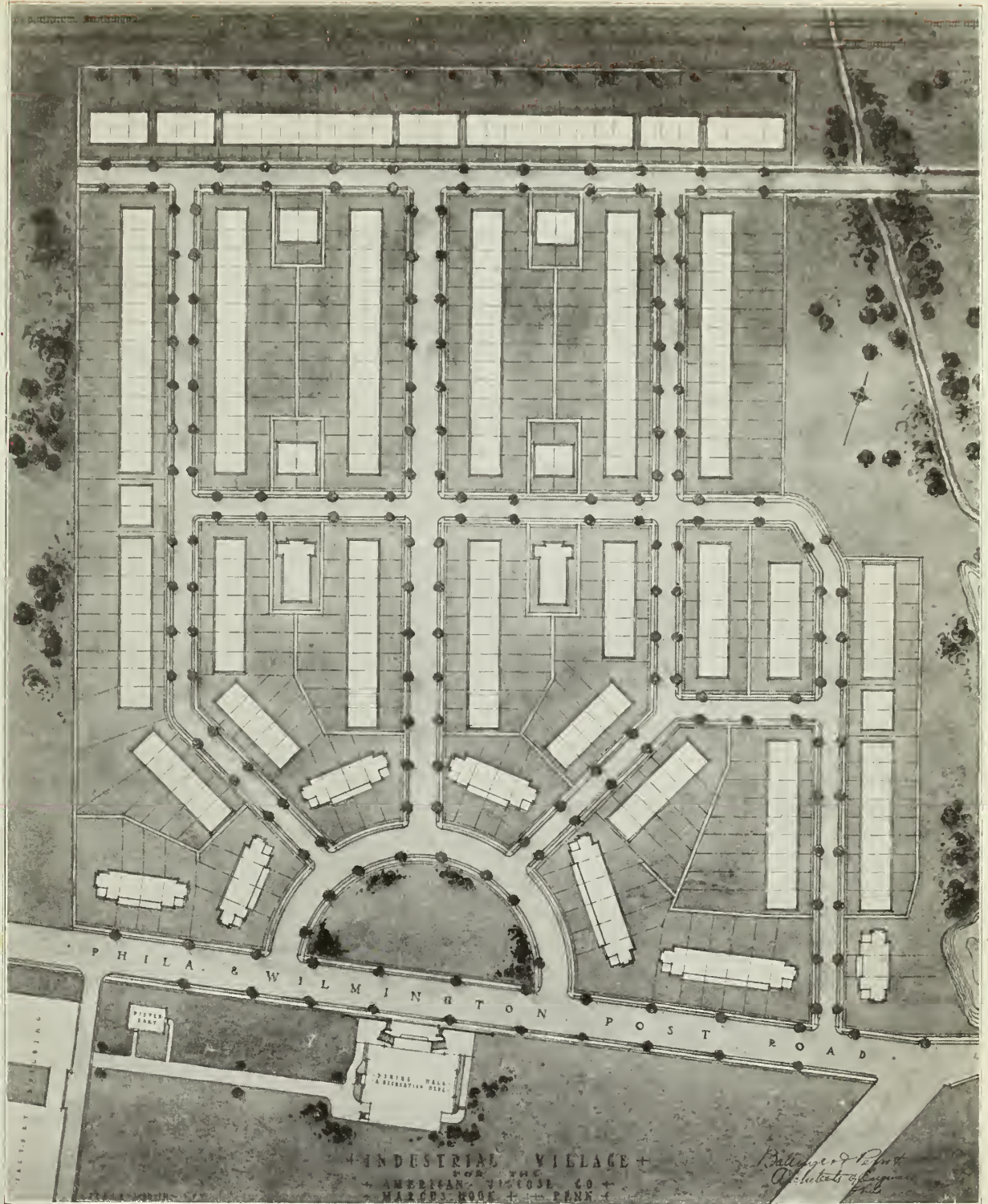
Phil'a and New York.

(See 6 and 7, page 48)



Elevation of preceeding plan, used as illustration of the Emergency Housing of Industrial Armies. Used by kind permission of Ballinger and Perrot, Architects and Engineers, Phila. and New York.

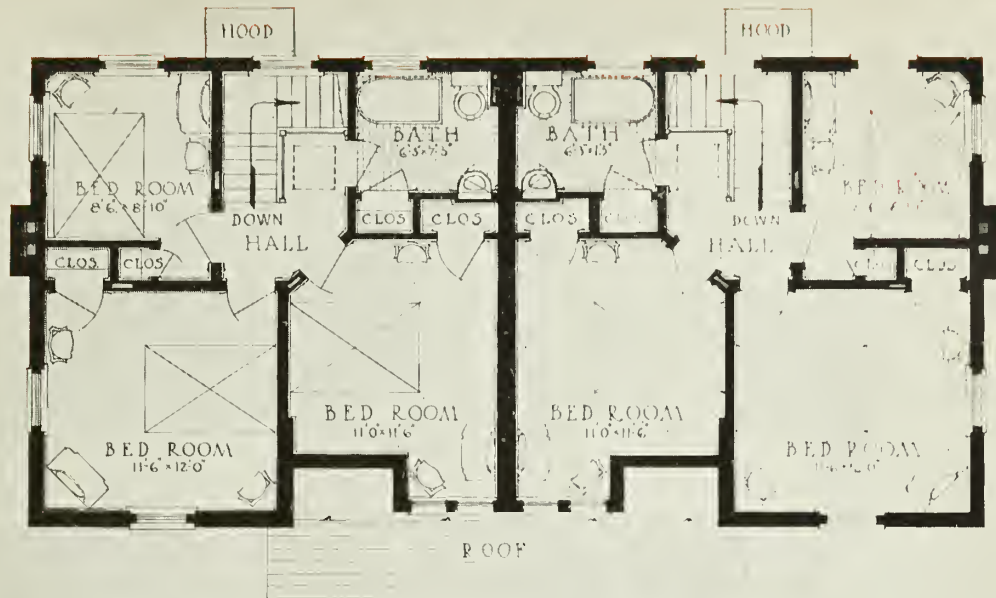
(See text, page 48)



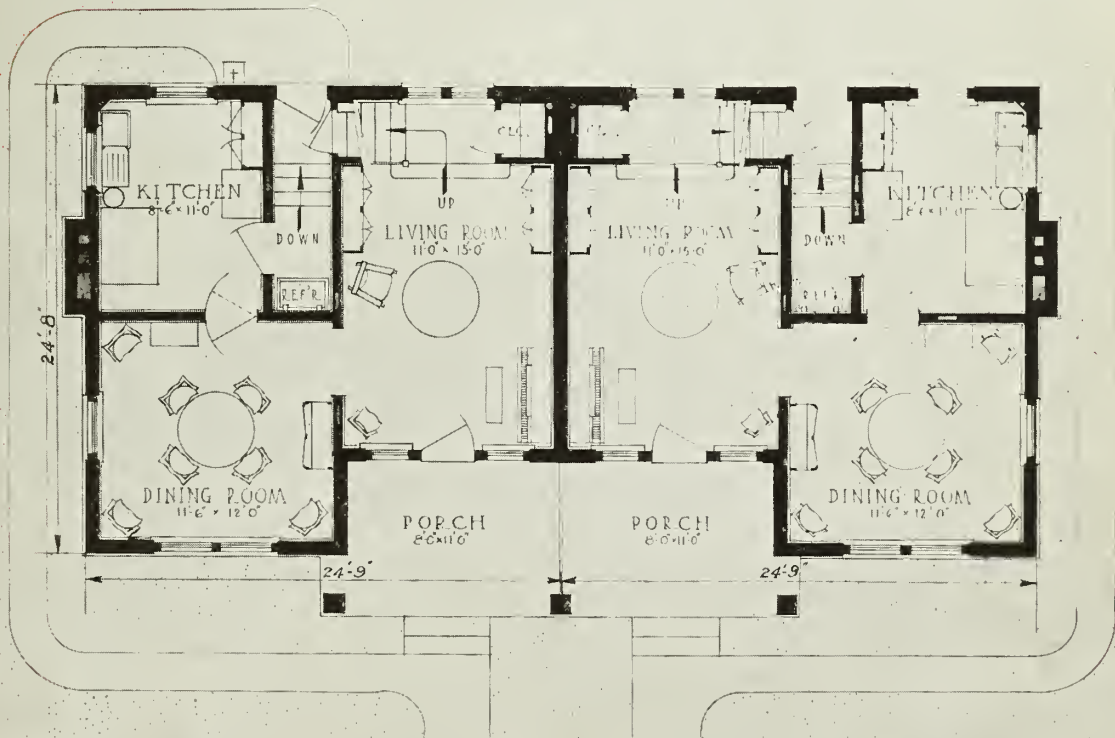
2nd type of Industrial village to solve the Emergency Housing Problem produced by abnormal growth of Industry.
 American Viscose Co., Marcus Hook, Pa.
 Ballinger and Perrot, Architects and Engineers, Phila. and N.Y.

(See text, items 6,7,8, page 48.)





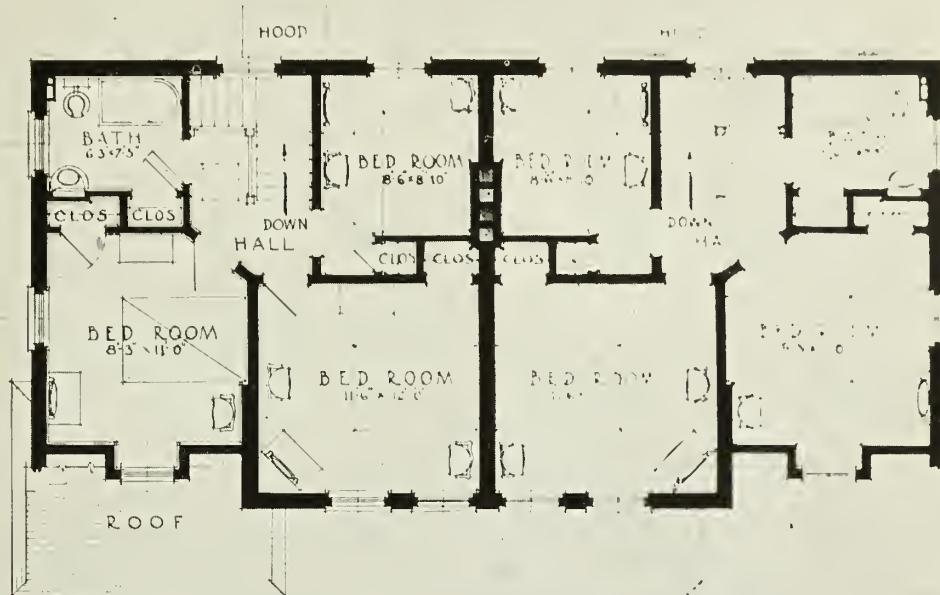
SECOND FLOOR PLAN



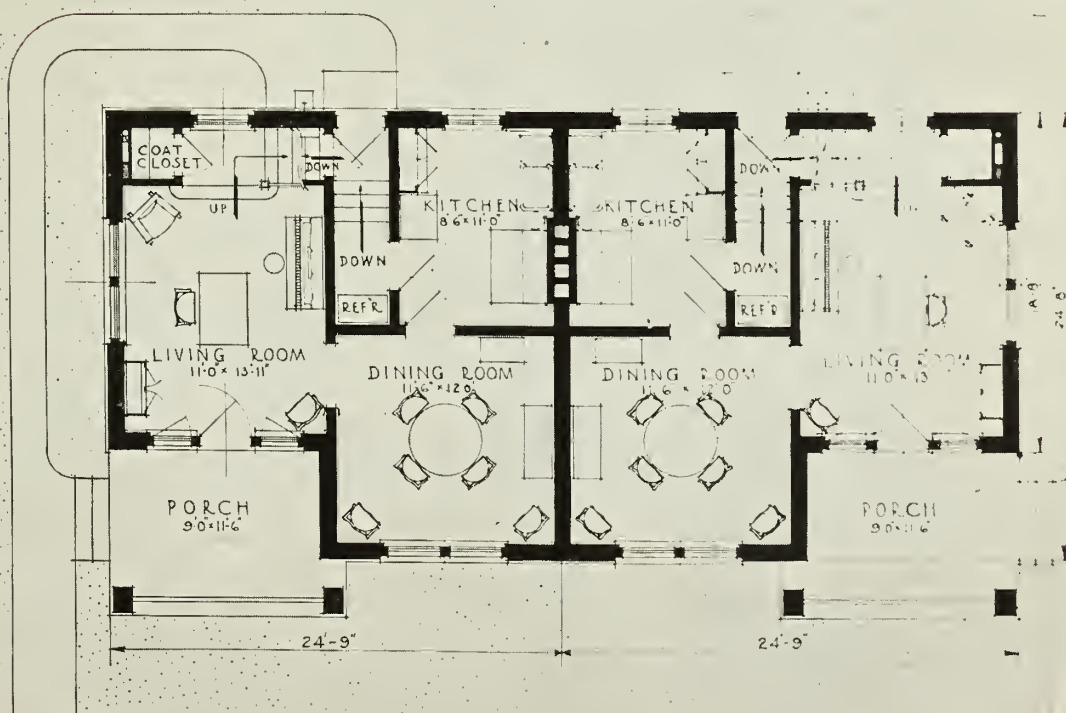
FIRST FLOOR PLAN

Plan of six-room, semi-detached house, a type largely used in industrial housing groups.

(See text, page 49.)



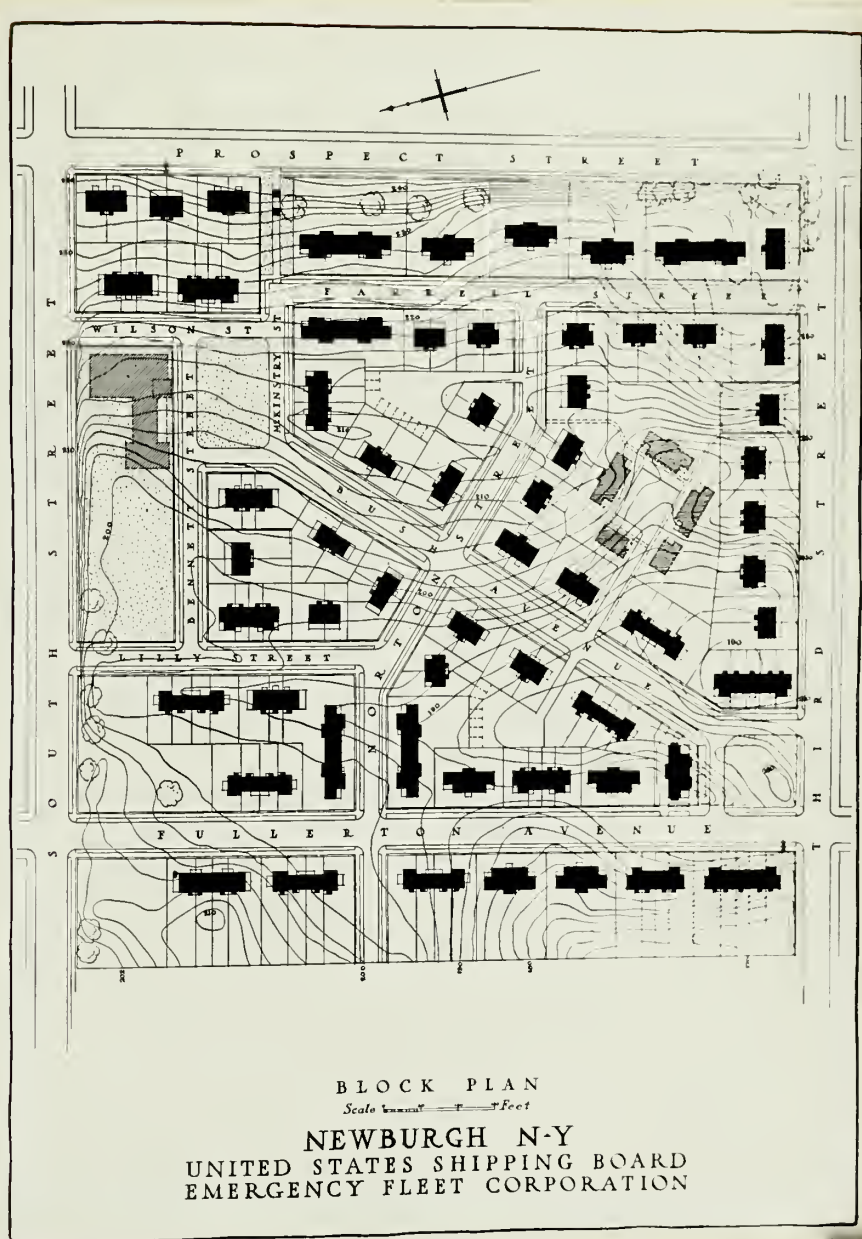
SECOND FLOOR PLAN



FIRST FLOOR PLAN

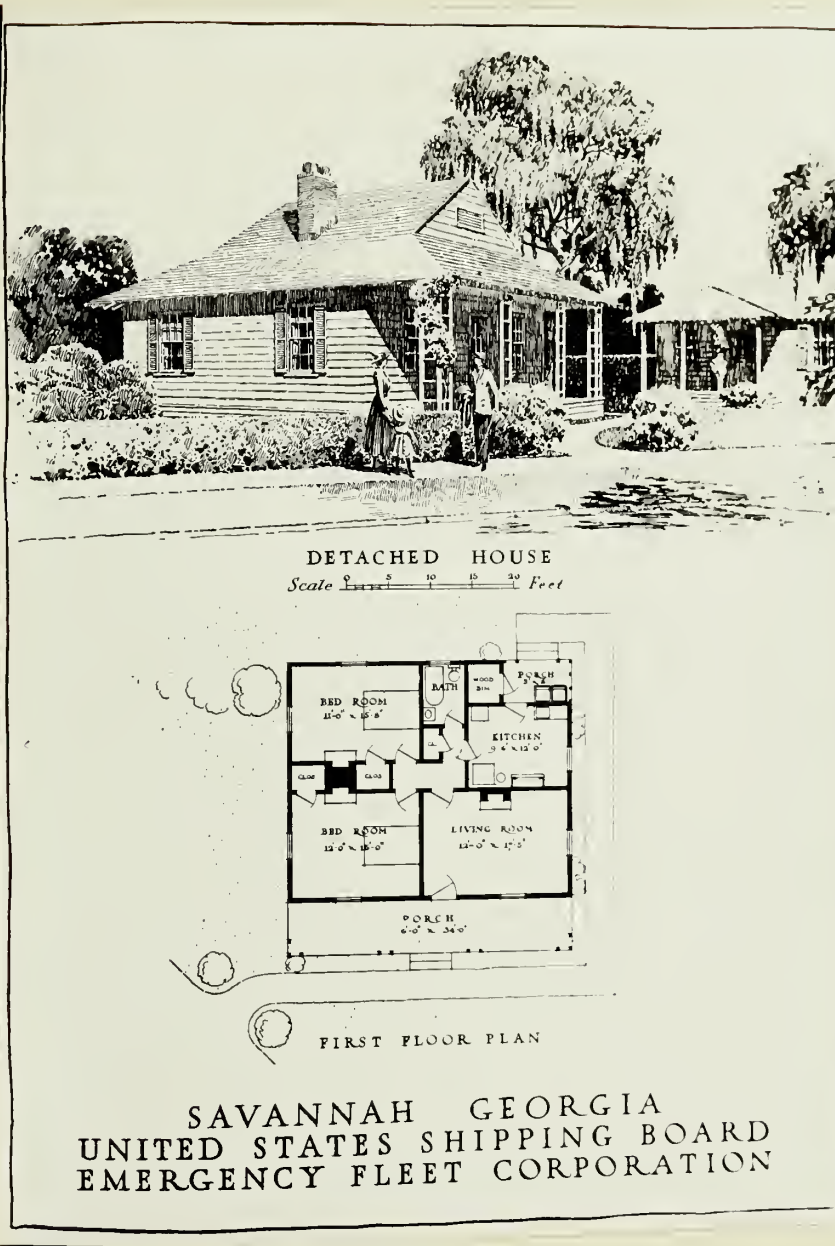
2nd type, 6-roomed, semi-detached house used
in Industrial Housing scheme.

(See text, item 10, page 49.)



Plan of typical smaller Emergency Village.

(See text, item 3, page 48,



Type of four-room detached house, found to be best adapted to quick construction in better type of Industrial Emergency Housing.

(See text, item 10, page 49.)

IV. AN ATTEMPT AT THE SOLUTION OF THE EMERGENCY HOUSING PROBLEM IN THE WAR DEVASTATED REGIONS OF NORTHERN FRANCE AND BELGIUM.

Leaving the American problem of Emergency Housing, caused as it has been either by natural disaster or economic and social revolution, there will next be considered a more dramatic aspect of the housing problem as brought about by the devastation of war. Probably never before in history has so vast an area with so many thickly populated towns been so ruthfully and thoroughly devastated by man's heartless ingenuity as may be witnessed in the areas of Northern France and Belgium as a result of the World War of 1914-18. This is not the time, nor is there space, even to refer to the many authorities who have cited the causes and effects of the great war. Only will it be stated that at the signing of the Armistice on November 11, 1918, in the aftermath that awaited the exhausted gleaners of France and Belgium, there was, as a rough estimate, 200,000 totally wrecked houses; about 1,000 parish churches^{*1} wrecked beyond repair, 1,800 schools and public buildings battered beyond recognition, 8,000 square miles of land that had to be cleared of war refuse, barbed wire, unexploded shells, uncontrolled weeds, and reclaimed from trenches and shell holes into the fertile fields of old.*²

*1 (See illustrations, pages 59, 60.)

*² "Annuaire Statistique de la France, 1917, values the entire house property of France at \$11,900,000,000 (dollars). \$600,000,000 at prewar prices or say \$1,250,000,000 at the present time is Keynes estimate for the value of destroyed house property of France."

With landmarks lost, traditions unhallowed, trades and occupations dispelled, families killed, lost or scattered to the four winds, the houses and villages literally shot off the face of the earth, - here was an emergency housing problem to be written with EMERGENCY in the boldest type. *1, *2.

*1 (Belgium wealth. 1913 Report of Finance Ministry of Belgium, -
 Building wealth - \$1,175,000,000.
 Building loss - \$ 750,000,000.

John Maynard Keynes, Fellow of Kings College, Cambridge; -
 Deputy for the Chancellor of the Exchequer on Supreme Economic Council.)

*2 ("The total property losses inflicted upon Belgium have been estimated at between \$6,755,000,000 and \$7,600,000,000. --- Equally systematic was the destruction in the invaded districts of France which comprised eleven of the most prosperous departments. There fell into the hands of the Germans 2,554 communes with a population of nearly 4,000,000. About 8,000 square miles of the agricultural lands were laid waste, and 500,000 buildings damaged, of which 250,000 were completely destroyed. In over 500 of these communes the ruins will have to be razed to the ground to permit of reconstruction. This is true of Arras, Albert, Compeigne, Rheims, Hazebrouck and Bethune -----, It is reported that nearly 1,500 schools, 1,200 churches, 337 public buildings and over 1,000 industrial plants were completely destroyed. Railroads, bridges, power-plants and other public utilities were systematically put out of business."

Ernest L. Bogart, - "Direct and Indirect Costs of the Great War", Oxford University Press, 35 West Thirty-second Street, N.Y.C.)



a Hotel de Ville.



b Typical street scene after
the refuse had been removed.



c. The cathedral from the choir-----from the nave. a

Rheims, typical of the larger destroyed
cities of Northern France.
(See text, page 57.)



a. Clermont en Argonne.



b. Brizeaux.



c. Neuville.



d. Dun sur Meuse.

The housing problem in France and Belgium became a difficult one immediately after the German forces advanced, forcing the civilian populace to flee in front of their shell fire. The terrified inhabitants, evacuating, often within a few hours notice in front of advancing armies, the homes and villages that had been the orbit of their little universe for a lifetime, taking with them only the least bit of their goods and chattels, oftentimes leaving their beloved ones dying or freshly buried, - they were the subjects for themes of great tragedies, the most intense perhaps that human experience can afford. Once beyond the danger line, it was the problem of the plucky refugee to adapt himself, or more usually herself, to the new environment of an already overtaxed neighborhood, to a foreign people as the Belgians in Holland, Normandy or England, or to almost as new conditions as the French of the North found in other parts of their own country. Huddled into the crowded cities and villages, - especially those near the war areas, - the refugees made living conditions far from ideal for their hosts or for their miserable selves. Labor disorganization, poverty, sickness, discouragement and loss of morale were the natural outcome. The problem was forced upon the municipal and welfare organizations in drastic terms. Attempts were made to find temporary quarters for civilians, although in war the army must come first, the rights of civilians being a distant second. Most of the available funds and building material had to go to the all too poorly equipped and sheltered soldiery.

To house the refugee colonies after every available house in the city or village had been filled, schools, churches, "aziles" and other public buildings were converted as well as possible into "abris" or hotels. Next, large barracks of the quickly mountable type were erected to serve as shelter, home or hospital. These necessitated strict organization and control, for society at large is seldom ready for communal existence in too close quarters, and it takes a rare and tried set of individuals who can live peacefully and prosperously in a cramped and common home. A refugee populace, of all ranks and interests and ages, of both sexes, heart-broken, discouraged, disconsolate, are hardly the most ideal material for such a socialistic experiment. While communal huts are a first emergency means of relief, they ought always to be conducted as organized hostels, no matter how poor the accommodation, and put under a responsible manager who can enforce daily cleaning and rigid rules of order.

2. Communal Hostels.

The communal hostel became a common feature in the lives of refugees and relief workers during the four years of war and even after the armistice when there was an even greater migratory population, especially in France. All the larger railway stations became centers of an ever moving, ever wretched mass of humanity that fear or hunger or the military regulations had forced on, whither they scarcely knew and often little cared, were there but some relief workerson hand to steer them toward some steaming

soup and a place to lay their aching bodies. Every "gare" wait-
 ing room became filled with masses of disorganized humanity ^{their} and/
 baggage and babies. Barracks must need be quickly provided where
 food could be administered to the faint and hungry, medical re-
 lief to the ill and injured, and some place where straw pallets
 might be placed, or blankets distributed to ease the aching bones
 and sooth the dreadful dreams of old men, heart-broken women and
 tender children who had borne for days the horrors of forced
 marches or crowded box cars.

3. The Problem in the Marne and Meuse.

(The accounts compiled from the author's personal diary
 and notes of personal experiences in the Marne and Meuse may have
 some value in throwing light upon the emergency housing of the
 war stricken civilians, - the first showing a solution without
 preparation, the later a case where, profiting by the former,
 the problem was more successfully met by studied preparation.)

Early in November, 1918, the civilian population of a
 large section of the department of the Meuse that had been within
 the German lines during a greater part of the war, was left
 stranded by the sudden retreat of the German forces
 and the advance of the French and American armies. Winter with
 its continual rains was well along. The region, torn and retorn by
 the fire of advancing and retreating armies, offered scarcely
 shelter or food for much but the flocks of scavenger "corbeaux".

The armies needed the shelter that the few unshattered villages could provide. The French military undertook to evacuate the civilians, herding up the wretched people like animals into box cars which, after a couple of days of hesitating and bumping itinerary, deposited them near the "prefecture" of the Meuse, there to be sorted out, classified, and disposed of as a kind Providence might decree.

As the military deposited them at the rate of from fifty to eight hundred per day for a space of several weeks, and with the exception of the provision of a ration of carrots, meat and bread, considered their responsibility complete, it remained with a few civilian volunteers to cope with the housing situation as well as possible. Fortunately, a large insane asylum located but three kilometers from Bar le Duc, the prefecture of the Meuse, had been vacated upon the German advance, but ^{remained} undestroyed. By placing straw ticks closely together upon the floors of the great empty halls, as many as three thousand people could be accommodated per night, while the great kitchen and refectory did service as a feeding station. Other wards with beds were converted into hospitals for men and women. Daily medical clinics for dressing wounds, abscesses, sores and dispensing drugs and clothes were established in the crowded quarters. Thus a sort of community existence for a continually changing population was established to maintain life with just a small degree of comfort, at least, for a mass of people afflicted with mal-nutrition, abuse, disease and all the loss of morale that so quickly accompanies physical disabilities among

young and old. In such a regime, disinfectants needed to play an important part. The halls needed to be cleaned out daily, - a difficult task with great numbers of old and partially sick people wearied with long trips, - the straw mats collected, and the floors and walls washed out with carbolic water; sulphur burned where rooms could be emptied of people and sealed; surplus baggage, of which refugees always seem to have an unwholesome and diversified assortment, kept out of the buildings. In spite of all that could be done for order and sanitation with limited help and supplies, disease broke out and much suffering and many deaths from influenza and tuberculosis resulted before the people could be assorted, families connected and distributed to more comfortable quarters in undamaged villages.

Next came the task of re-establishing the homes in the devastated regions as the military released its control. As the Meuse refugees were none too welcome visitors among the people who were their official hosts, and as the ambition of all the better class of the people was to get back and reclaim their former homes at the first possible moment, the urgent problem was to have some housing accommodation ready for the people as they made their way back in time to get even a bit of spring planting done as a start toward the possibilities of rehabilitation. Profiting by the experience of evacuation days, the first necessity was the establishment of so-called "hotel barracks" ^{*} that would be running with canteen and sleeping accommodations at the chief centers for

*(See illustration, page 66)



"La Maison des Etoiles", -first hostel to be erected at Clermont en Argonne by the Society of Friends, for the purpose of giving accommodations to the returning refugees in the devastated regions of the Meuse.

(See text, page 65.)

those who came back to find their former homes but unrecognizable piles of crumbling stone or shattered masses of shelled debris and charred ruins. Such places as these barracks afforded a center for family reunions, for information and advice, material aid and spiritual comfort. Architecturally, these hotels were lacking in all but economical planning, the elements being convenient kitchen and dining room, store-room for relief supplies, separate dormitories, with camp cots and clean blankets, for men and women, or, more preferable, separate cubicals with wood or merely muslin partitions to give some privacy to grief or illness. Such were among the first new establishments at Clermont en Argonne, Dombasle, Varennes, Rheims and other places where the Société des Amis*¹ undertook the manifold problems of reconstruction and relief of war victims.

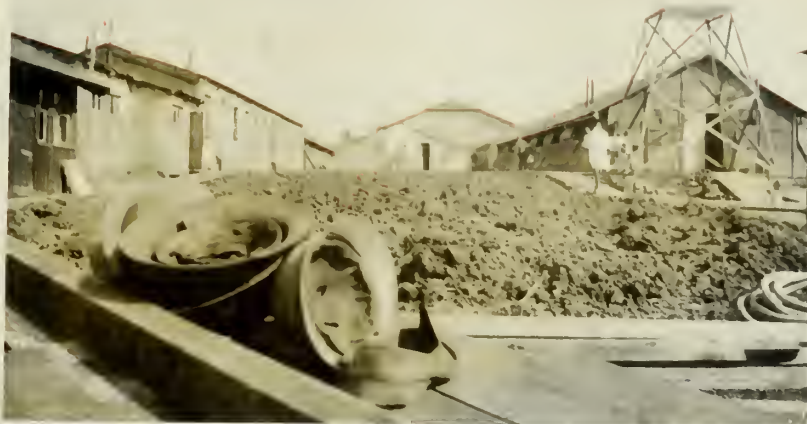
The most feasible type of barrack used for these refugee hotels was the one of demountable sections such as the Adrian type used in the French, British and later American camp construction. Floor, walls and roofs, all being made in sections, such a "hut" could readily be thrown together. Being of uniform plan, it could be of a length such as the need might be or the site permitted. As the need of such buildings was but temporary, the sectional barracks had the further advantage of permitting rapid demounting and transfer to new areas as occasion demanded. Even in large barracks with walls of but a single board in thickness, considerable warmth and comfort could be obtained by tar-paper lining which could be whitewashed on the interior. The roofs were covered with

*¹ English and American Society of Friends (Quakers.).

tar-paper or tile. Many such barracks offered the first shelter and encouragement to the returning victims, and, even after separate houses had been erected and damaged houses had been repaired, still continued to serve the community as school, church, hospital or municipal center.

The next step in the process of emergency housing was, once the returned citizen had been given a welcome of food and temporary shelter, to make possible the re-establishment of his old occupation and means of livelihood for himself and family. As the land was the natural source of income in most of this region, shelter for man and the live stock that he often brought back from his exile with him, was essential. Horses, cows and small animals, agricultural implements, seeds, live stock, household furnishings, clothes and food had to be provided, so stores where such commodities could be obtained were early essential. Above all was the need of every family to have a household as the motif around which all the new life might center, as well as for the necessity of having protection from the elements. Left-over army barracks; "elephant irons" (sheet metal sections used for shell proof protection of men, supplies and ammunition), the wrecks of former buildings, abandoned freight cars could be, and often were, converted into farm buildings. Cooperative stores established in quickly erected huts, and supplied by generous material contributions of the American Red Cross, liquidated army supplies or gifts, all judicially controlled and administered, solved the problem for the supply of necessary provisions. These needs having been met, the building

*(See illustrations, page 69.)



1. Group of Emergency Hospital barracks at Brizeaux, Meuse. Adrian barrack on the right. Mission and French huts on left of court.



2. Emergency housing in the Argonne forest.



3 "Apartment House" made from Army Barracks. Camouflaged boards add a bit of interest, if not novelty.
(See text, page 66.)

of the homes could be attempted.

It would have been a rather Herculean task for any one man or even group of men, without a large amount of political, financial and physical backing, to have attempted the problems of rehabilitation in any of the more seriously devastated regions. The barren wastes of Northern France which one still encounters en route from Paris to Brussels, from Reims^h to Lille, testify to this fact. Gigantic enough was the task that awaited, and still to a large degree confronts, the returned inhabitants of the regions where organized aid in reconstruction has been generously given by private and governmental assistance.

As an example of the emergency housing and rehabilitation as promoted by foreign aid, there may be given a survey with some of the details that became the special problem of the Anglo-American Society des Amis (English-American Society of Friends or "Quakers"). With a reputation for relief work among war victims dating back to the Franco-Prussian war of 1870, and with four years of special experience in relief work during the Great War, they were on the field to offer well formulated plans for reconstruction the moment hostilities ceased. Backed by their records of war work in the Marne and lower part of the Meuse, the organization was encouraged to undertake the greater problems of reconstruction that, late in 1918, opened up in the greater part of the Department of the Meuse of which Bar le Duc is the prefecture.

*
Forty-four villages, some unoccupied since the Germans burned them in 1914, some levelled in the great battle for Verdun in 1916, some

*(See map, page 71.)



May showing the location of the forty-four villages of the Verdun area, whose reconstruction was undertaken by the Society of Friends in 1918-19.

(See text, page 70.)

intact until the last weeks or days of the war when the rapid advance of the American army and the destructive retreat of the Germans left them in ruins, a few scarcely injured except by the occupation or neglect of four years of war, were included in the area known as the "Verdun region", which the Society of Friends, at the request of the French government, undertook to reconstruct and rehabilitate. Probably no corner of France had suffered more from the war, for within its area was included the famous "Mort Homme", Voquois Hill, Varennes en Argonne, Four de Paris, the forest villages of Very and Cheppy, while later Monfaucon, Grand Prè and Attigny in the Ardennes, were included in the housing program.

The problem was one which to be solved effectively had to be solved most promptly. The organization was well established with home offices in London and Philadelphia, to manage funds, determine general policies and select personnel. The central administration bureau was well established in Paris. Many volunteer English and American relief workers were in the field, occupied with work among the refugees. With the signing of the armistice, the general desire of the refugees was to get back into the devastated regions, and so the problem was to have a rehousing scheme organized and work started in the field to meet the returning inhabitants. Contact had been made with many of the Meusene peasants during their sad days of flight and exile, by various relief workers of the organization. Through the mayors, curès

and responsible representatives of the destroyed villages, the plans were made known and encouragement and cooperation given. Preparation had been made by a listing of names and property owners and ^{the} securing of maps and village records from the fortunately undestroyed files of the departmental offices at Bar le Duc. Most important, there was a large supply of demounted sectional houses that had been manufactured during the last years of the war in factories run by the organization at Dole and Ornans in the Jura. These specially designed houses had been well and economically manufactured from Swiss lumber in prospects of the unknown time when the demand for such would be sudden and intense. Time justified the forethought, for almost as soon as the refugees began to arrive back into the devastated regions, carloads of these houses were being piled near the sites of their wrecked villages. Previous housing schemes executed earlier at Sermaize les Bains in the Marne had made "citès" of brick walled houses, but the difficulty of the transport of brick, ^{the} time and expense of labor required, and ^{the} lack of proper sand for mortar, made other than the demountable houses impractical for that time.

In general, the method of procedure in the re-establishment of the home life of a village could be divided into two types, although each village offered a unique problem or a composite of distinct problems. The simpler of the two was where the entire village or a part of the village had been so entirely destroyed that any attempt at restoration seemed futile. In such a case, it was better to erect on a clear space as convenient to

the old village site as the nature of the land would permit, the nucleus of a new village. As most villages owned good communal land, the site could usually quickly be determined by the sanction of the mayor, and, unhampered by property lines and petty personal ambitions, some attempts could be made toward improved schemes of village planning with regards for convenience, sanitation and even an attempt at an artistic setting. Such schemes were effected at the previously mentioned village of Sermaize les Bains and at Pargny in the Marne, at Aubreville, Neuville and Lachapelle in the Argonne, and at Montfaucon.

The more common problem was caused by the partial destruction of many of the villages, that is, by the survival of enough buildings, even in a badly destroyed state, to enable a village to retain its old character. Here, property lines played an important role, and each petition for a new house meant the clearing away of debris, the utilization of often existing cellars and a regard for garden sites and landmarks. Once the house was erected to the attempted satisfaction of owner, officials and neighbors, the result was apt to be anything but a homogeneous effort at village planning, but much in the way of permanent beauty could not be expected in the practical utilitarianism of emergency housing.

The partially destroyed villages, as well as practically all the villages within the warring districts or wherever normal life had been interrupted by the army occupation, offered a great

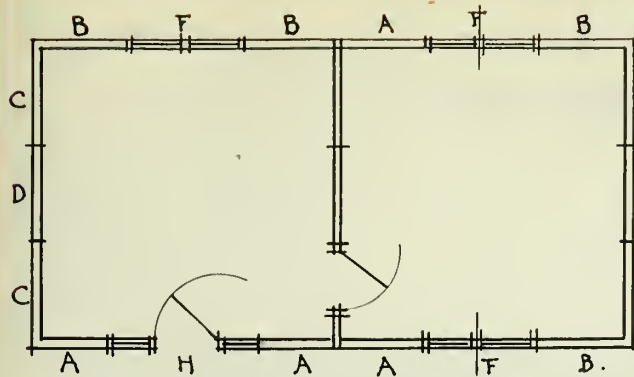
field for repair work in connection with the rehousing problem. With building materials very scarce and correspondingly expensive, with lack of craftsmen and man power, due to the losses and delayed demobilization, with the rapid decay of buildings once disintegration started, the task of making repairs wherever possible was a most essential and urgent one. Working tools and temporary repair materials such as tarred paper roofing and lining materials with special fastening devices, raw tar for sealing and sanitation, quick lime and whitewashing materials and various other disinfectants, oiled cloth or paper (papier d'huile) to take the place of broken glass, and rough cement for stopping holes with broken stone, were on the list of first essentials. Later came stock windows, roof tile, lumber, lime plaster, more cement, putty, glass and all kinds of hardware, tools and fixtures, paints and wall-paper. Where restoration could be made, it was the greatest satisfaction to preserve the fine proportions and graceful outlines of the charming stone and tile and half-timbered structures of former times when the French built with such refinement of form and solidity of construction.

In spite of the possibilities of the repair and restoration work, the demountable section houses, or "baragues", were perhaps the most important feature of the reconstruction work. After the supply of so-called "Mission Houses", those manufactured by the "Société des Amis" at Dole and Ornans, had been exhausted by the early summer of 1918, other types were imported from

Switzerland or provided from the stock houses of the French government. Design and plans for what experience has shown to be the most feasible and durable house for similar purposes are here shown (plates 77-79), the characteristics emphasized being ease and simplicity of erection by small groups of none too skilled labor, stability, warmth, convenience, durability and general appearance.

The type of demountable house here shown was made up of typical sections, simple and economical to manufacture even with unskilled labor and no very high power machinery. As the four types of houses, classified as to size (plate 77), contain many similar sections, the possibility of adding variety and adaptability without complications was afforded. This type of house with tiled roof ought to offer comfortable shelter for from twenty to twenty-five years, during which time the people of thrift and industry would no doubt be able to build for themselves new homes and public buildings, as was found to be the case in several Marne towns in a much shorter space of time.

The process of construction was simple. Petition having been made for a house, land records and rights of claim having been promptly decided by the curè or mayor working with the building representative "au courant" with local affairs, the site was jointly agreed upon and the sections delivered. Foundation stones were usually easily available from destroyed stone buildings, or the heavy concrete anchor blocks that the American army had



TYPE "A" 2 ROOM.

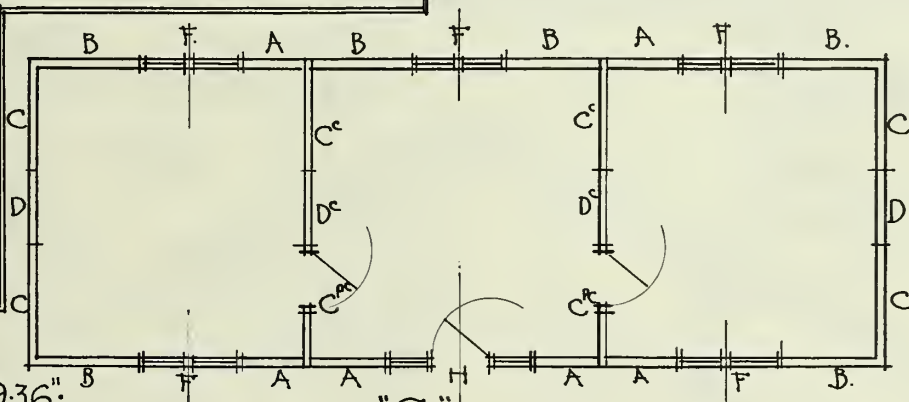
SIZE - 4 METERS X 8 M. = (13.12' X 26.24')

TYPICAL PLANS - FOR DEMOUNTABLE HOUSES. MISSION DE LA SOCIÉTÉ DES AMIS.

Each Section
Being Plain-
ly Lettered
according
to type, ease
and rapidity
of construct-
ion is made
possible.

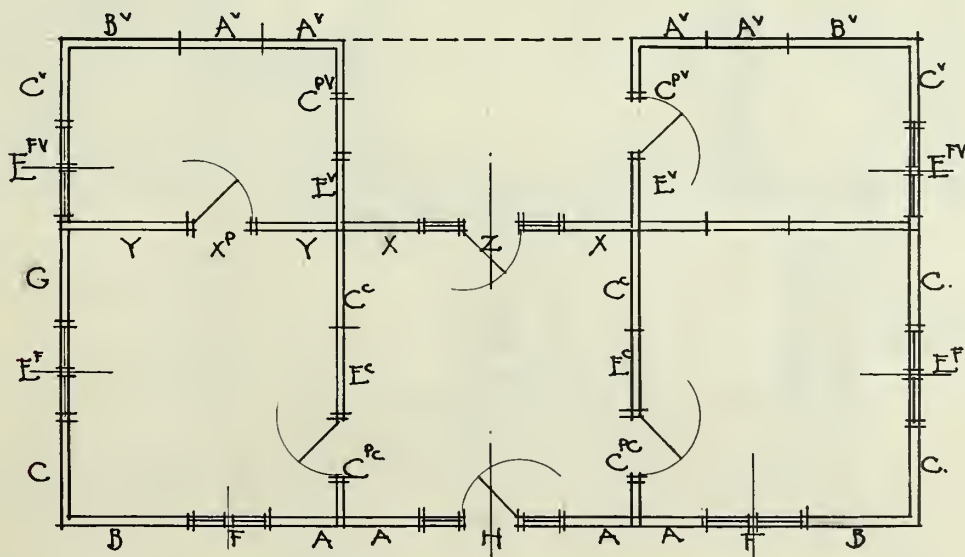
SCALE.

1 CM. = 1 M. = 39.36"



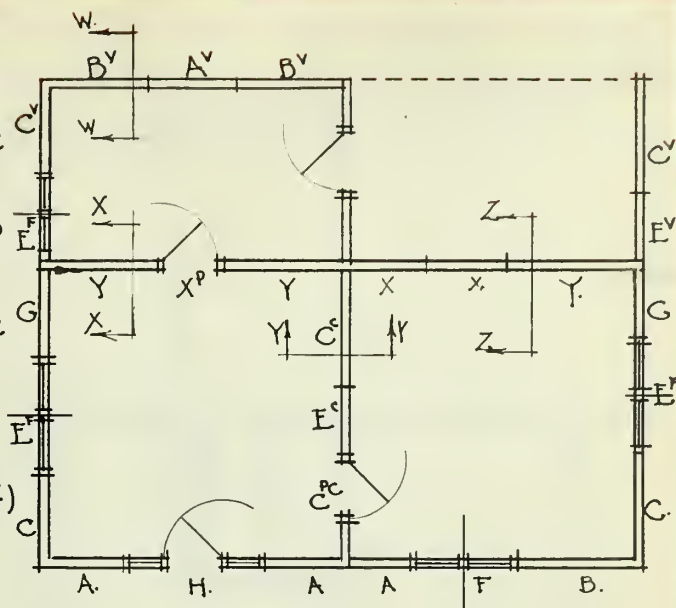
TYPE "C" 3 ROOMS.

SIZE 4 M. X 11 M. (13.12 X 36.08.)



TYPE "D" - 3 ROOMS WITH SHEDS.

SIZE - 6.5 M. X 11 M. (19.68' X 36.08').



TYPE "B" 2 ROOMS WITH SHED.

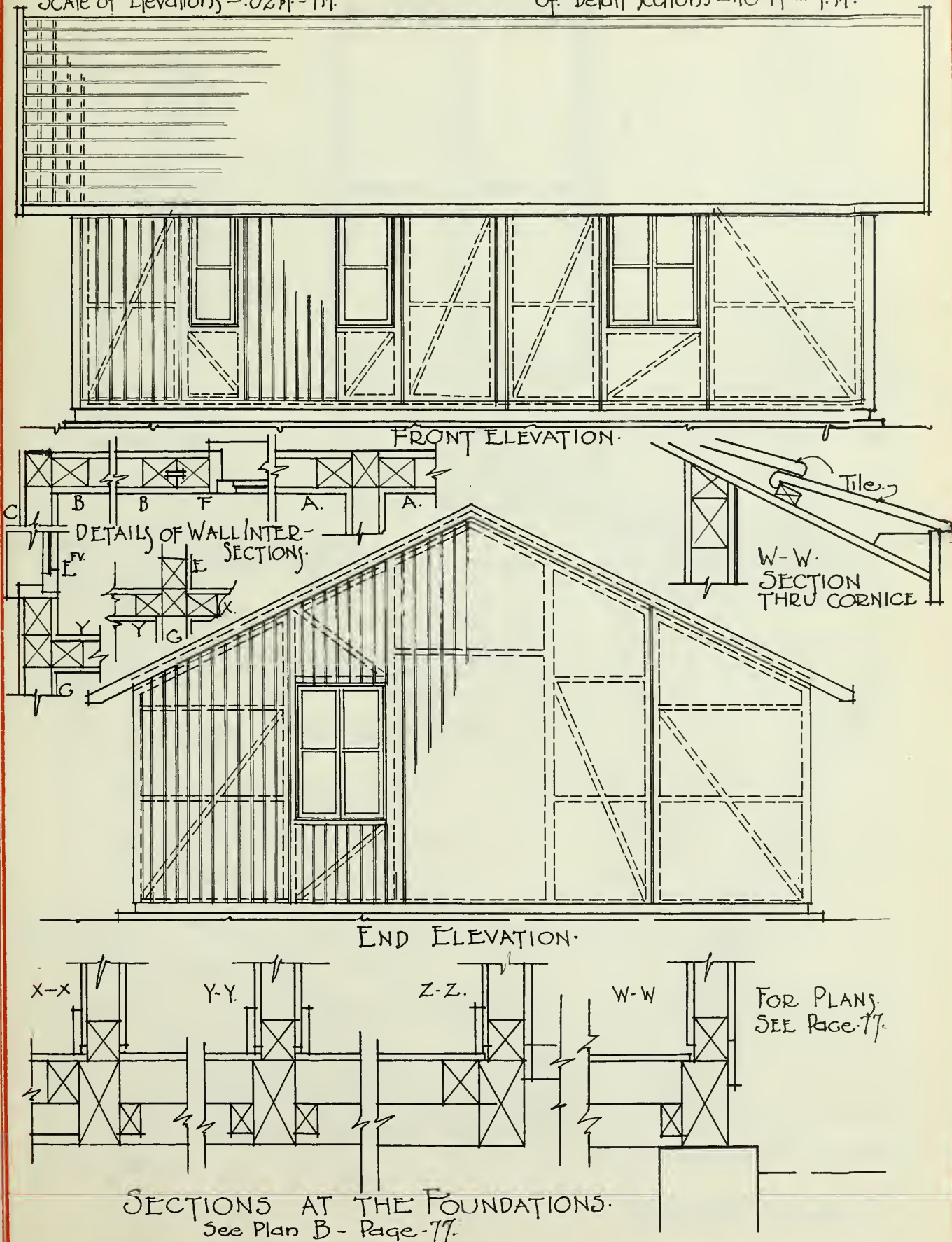
SIZE 6.5 M. X 8 M. = (19.68' X 26.24').

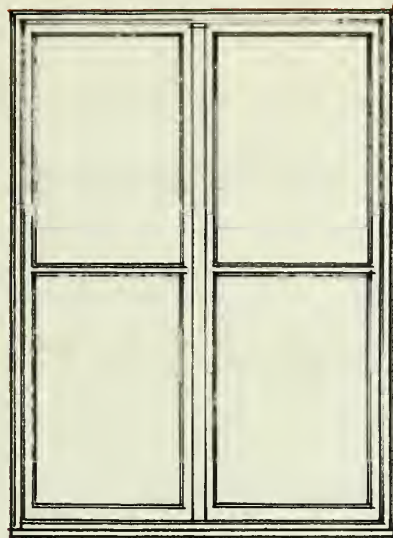
TYPICAL ELEVATIONS AND DETAILS FOR DEMOUNTABLE HOUSES.

DESIGNED, MANUFACTURED & USED BY "SOCIÉTÉ DES AMIS" IN FRENCH RECONSTRUCTION.

Scale of Elevations = .02 M. = 1 M.

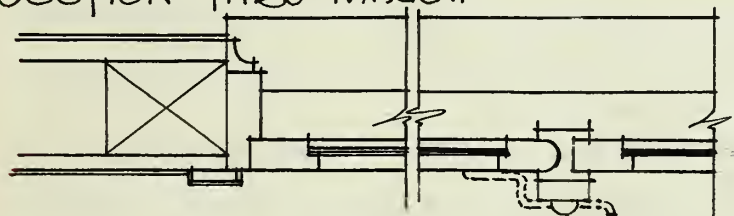
of Detail Sections = 10 M. = 1 M.





TYPICAL Window-
Made of Oak To Fit
Section "F" and
also made in large
Numbers for Repair Work.

Section THRU Window.



PLAN THRU WINDOW JAMB.

SCALE OF SECTIONS.

.01 M. = .05 M.

SCALE OF ELEVATIONS.

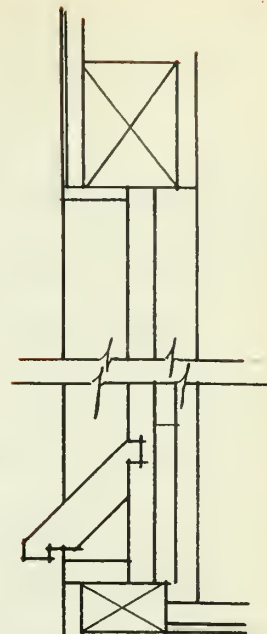
.06 M. = 1.00.

RELIEF HOUSING IN FRANCE.

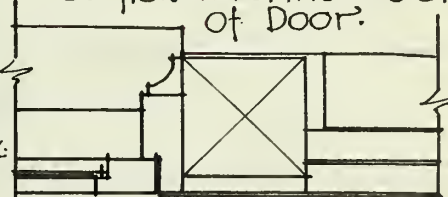
Société des Amis.

DETAILS OF DOOR & WINDOW.

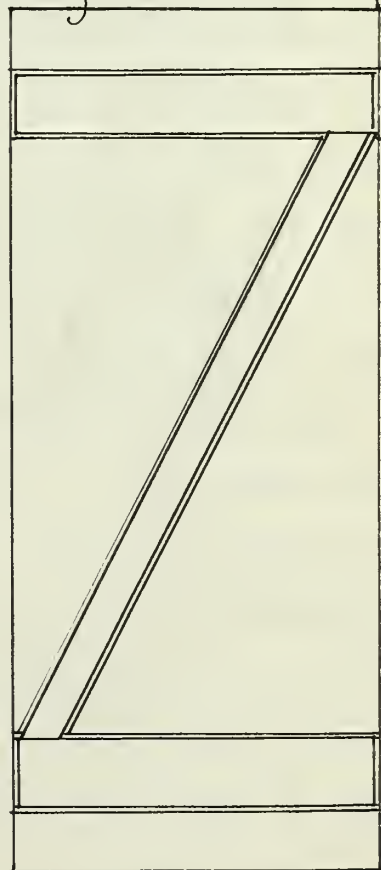
OF DEMOUNTABLE HOUSES-TYPICAL
FOR ANY SECTIONS WHERE OPENINGS
OCCUR IN ANY OF THE FOUR SIZE
HOUSES - WINDOW FRAMES AND SASH
OF OAK.



Section thru Head & Sill
of Door.



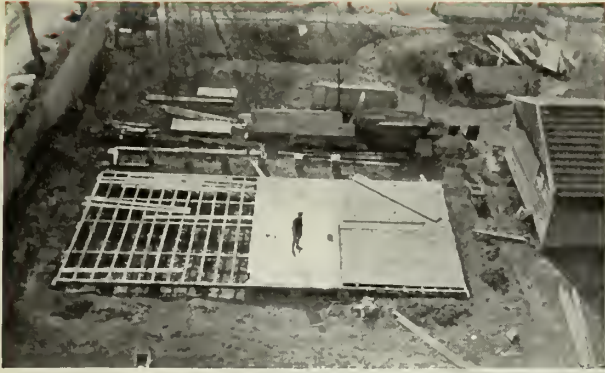
Plan thru Door Jamb
and adjoining Wall Sect.



TYPICAL DOOR.

brought into the region preparatory for the coming offensive, were utilized. The floor beams and joists,* trimmed and cut to exact size, were quickly laid in place and spiked. Upon these the ready made floor sections were laid. This formed a solid platform upon which the wall sections could be stood, their lower ends fitting into the groove made by the floor slabs and the girder plates. The clearly numbered sections were fitted and bolted together with "cover-joints" similar to the ones used on the exterior face to obscure the place of union. A plate fitted into the tops of the sections, further secured them and gave bearing for the roof joists or rafters upon which the sheathing sections of the roof and ceiling could be placed. The interior partitions were of sections of similar construction to that of the exterior walls except that both faces were of the same interior finish of matched and beaded "sapin" (pine). Doors and window frames for casements came in special sections. The overhang of the eaves was sufficient to throw off the excessive rainfall of Northern France and added much to the appearance of the rather neat cottage after the red interlocking French tiles, - manufactured in the neighboring Marne valley, - were added with chimney caps of the same material. Brown creosote painted on the exterior preserved the wood and gave an attractive combination with the dull red roofs which quickly gathered moss to enrich the tonation. A group of six workmen have the record of erecting one such house daily in the spring of 1919 at Neuville en Argonne.

*(See illustrations, page 81.)



The first stage of construction showing arrangement of beams and floor construction.



Erecting the walls.

Putting on the roof sections preparatory to "throwing" on the tile.



"Mission Houses" in different stages of erection in the reconstruction of the devastated regions of Northern France.

(See text, page 60.)



The completed 2-room house.

The rehousing scheme at Sermaize les Bains, Marne,- destroyed '14



The village pump, Sermaize les Bains.



Looking down the Main Street.



(See text,
page 83.)

House of M. Brochereau, village carpenter.

The accompanying map (page 71) shows the villages and area where similar housing work was attempted during 1918-20, while the illustrated cité of Sermaize les Bains*in the Marne was completed in 1916.

By the beginning of the year 1920, all the requests for homes that had been received from the people who wished again to take up their residence in the devastated district of the Meuse, had been met by the erection of the desired barrack, or building material and labor had been offered at cooperative/^{sales at}and/cost prices for repair work upon former homes where such was feasible. Taken as a whole, the experience stands outas unique in the solution of the emergency housing problems for destitute and homeless people. Naturally, this region must for years bear the scars of cruel wounds. In but few cases, (notably the Hospital Ste. Marie at Clermont en Argonne, restored and remodeled for the work of the Sisters St. Vincent de Paul, by the Friends' Unit), could restorations or permanent reconstruction be attempted during the first years after the war. Most essentially an emergency housing problem, the first attempt was to get the returned people housed so that they could again take up the work of normal life and by their own sturdy industry make the rolling hectares of the Meuse flourish and bloom under the care of their own sturdy sons and daughters who, the bulwarks of the French nation, made possible the renowned motto of their own memorial Verdun, "On ne passe pas!"

*(See illustrations, page 82.)

CONCLUSION.

The conclusions that may be drawn from this resumé and analysis of the emergency housing problem are generally obvious. The observations and experiences all point to the vital importance that housing a people plays in the moral, social and economic welfare of every race and every people of all times and climes. Firstly, there must be deduced the emphatic necessity of a wide recognition of the emergency of the housing problem and the importance of a serious striving toward its solution for future welfare. Secondly, there must be realized the fact that, especially in recent years, the preparation of adequate housing has, only in a small measure, kept pace with the increase in population and the higher standards of living for the masses of the people, which must ever be the aspiration of a rising civilization. Thirdly, it is apparent that delay on the road of steady progress, and the inability to rise to the occasion and take advantage of unexpected circumstances, may mark a cross-road leading to disaster. Fourthly, modern social tendencies show that the virus of small town decay, as well as many of the ills that infect the great towns, can well be fought by means of providing opportunely and promptly the proper homes in the proper environment. In all aspects, the vital importance of providing homes for a people makes it a problem of "Emergency Housing".

Some of the housing problems that have confronted other people at various times give evidence of the opportunities for which the architects of to-day must be prepared if they are to play the major parts in the masterly rendering of a mighty drama. Perhaps more than for any other profession, it is for them to solve the materialistic, economic problem that will raise the standards of living and bring system, order, simplicity and beauty out of the chaos toward which our ever more involved and complicated civilization seems pushing.

The consideration of the emergency housing problems brought about by great natural disasters, shows how suddenly and unexpectedly the needs of homes for the comfort and even life of a great mass of people may come. It is concluded, furthermore, that only rarely has there been a trained profession capable of coping with such situations that demand the highest type of co-operation, trained architectural and executive skill and devotion to exacting social service. In spite of the sufferings and misfortune that natural disasters inflict upon individuals, unusual opportunities are thus opened for the architect to create more ideal conditions.

A resumé of the work which the United States government promoted as a measure for gaining necessary war production, gives evidence of the importance of the rapid provision of comfortable housing for industrial workers. While suitable houses for all classes of people are essential to the welfare of a nation in normal times, the provision of them becomes an emerg-

ency problem in times of national stress.

The presentation of the problem of Buckman Village, Chester, Pa., one of the housing projects of the Emergency Fleet Corporation, shows an example of an efficient solution of the problem of making an attractive village of groups of economically planned small houses. Resultant of the extensive study leading to the solution of this problem, are concluded the ultimate schemes of the small, attached house plan and its environs that fulfill the just requirements of American home rights, even under stressed conditions.

Finally, experiences in the region where war devastation made emergency housing problems of the first magnitude, give conclusive evidence of the importance of prompt housing facilities to enable the reorganization of social and industrial routine, to heal the wounds of war, and even to protect human lives from death or worse depths of living degradation. While no two cases of war devastation would ever impose very similar conditions as far as the details of rehousing are concerned, all experiences in rising to emergencies, in the provision of houses as in anything else, have a potent value. In the French problem, the need for the prompt provision of necessary repair materials and quickly mountable houses, was perhaps only equaled by the need for encouragement and organization, for prompt action and unselfish service in the promotion of reconstruction of which housing is the most concrete evidence. The rehabilitation and restoration, social and material, of forty-four Meusene villages of the "Verdun region" of war-torn France, give

visible proof of what may be done by rehousing a people even in the brief period of less than two years after the most wasteful and chaotic destruction and disorganization.

From a psychological viewpoint, the aesthetic, and consequently spiritual, part that emergency housing may play in the rescue of a stricken people or in the elevation of their more normal existence, can not be neglected in this summation. The part that beauty, color, harmony and order play in society, must be recognized whether it be in a great, bustling, industrial city of America or in a small, obscure, rural, crumbling village of Europe. Minus the existence of beauty, itself, there is an emergency housing problem if the inhabitants of either place are to live soundly and prosper.

Finally, in summation of all, may it be hoped that the future is not far distant when Architecture, having won its true position as the most useful of the Fine Arts, the finest of the Useful Arts, may more promptly fulfill Her mission, in emergencies as efficient healer of social ruptures, in leisure as inspiring teacher of a higher culture, while She records in lasting stone and steel, the progress of a greater civilization than has yet been written on the pages of history.

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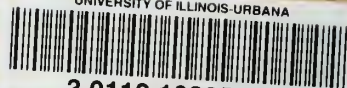
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